

**THE  
RAILWAY GAZETTE**

A Journal of Management, Engineering and Operation  
INCORPORATING

Railway Engineer • TRANSPORT • The Railway News  
The Railway Times • Herapath's Railway Journal • RAILWAY RECORD.  
RAILWAYS • ESTABLISHED 1835 • RAILWAY OFFICIAL GAZETTE

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1.  
Telephone: WHIttehall 9233 (12 lines) Telegrams: "Trazette Parl, London"

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BRISTOL: 8, Upper Berkeley Place, Clifton . . . . . Bristol 21930

Annually £4 10s. by post Single copies, Two shillings.  
Registered at the G.P.O. as a newspaper. Entered as second-class matter in U.S.A.

Vol. 97]

FRIDAY, DECEMBER 5, 1952

[No. 23

## CONTENTS

	PAGE
Editorial Notes . . . . .	617
Transport in Northern Ireland . . . . .	619
U.S.A. Railway Traffic Trends . . . . .	620
The Canterbury & Whitstable Railway . . . . .	621
The Indian Railway Inspectorate, 1951-52 . . . . .	621
Letters to the Editor . . . . .	622
The Scrap Heap . . . . .	623
Overseas Railway Affairs . . . . .	624
Publications Received . . . . .	625
Locomotive Coupling Rods . . . . .	626
Confines of Braking—5 . . . . .	627
Rolling Stock Wheel Manufacture . . . . .	628
Development of Light Shunting Unit . . . . .	633
New Locomotives for Iraq . . . . .	634
Personal . . . . .	635
News Articles . . . . .	637
Ministry of Transport Accident Report . . . . .	638
Contracts & Tenders . . . . .	641
Notes and News . . . . .	642
Railway Stock Market . . . . .	644

## Colonial Trade Problems Discussed

THIS week the Commonwealth Conference in London has begun discussion of the trade problems upon the solution of which the wellbeing of the Commonwealth and its contribution to world prosperity depend. Other countries besides our own have their balance of payment difficulties, leading on the one hand to trading restrictions and on the other to certain competitive advantages for suppliers able to offer terms not open to ourselves in present circumstances, or even considered desirable. Mr. H. R. Mackeson, Secretary for Overseas Trade, dealt with this question in his speech at a luncheon given by the British Electrical & Allied Manufacturers' Association last Monday, reported on another page, when he spoke of the necessity for avoiding "a mad subsidy race which would be good for no country and extremely bad for this country." Although Britain could not afford to sell goods on very long credit, he undertook that cases where extension of payment seemed justified would be considered, for the Government was not rigid in its views on this matter. Mr. Mackeson mentioned the unfortunate reduction in the purchasing capacity of our great friends, the Australians, but was glad to see a slight improvement in that direction. He made special reference

to the Canadian market, which was keeping up well, and, he was confident, was going to be one of the greatest in the world. Removal of the "vexatious problems" of restrictions to which Mr. Mackeson referred depends greatly on the ability of sterling countries to reduce dollar outlay by expanding their own production of many commodities. Plans for this purpose have been discussed by the Commonwealth Conference and include considerable investment in transport equipment. The annual surveys of Commonwealth railway progress given in our publication, *Overseas Railways*, are evidence of the efficient use being made of present resources, and the existence of a spirit of enthusiasm and inventiveness among all the administrations that will ensure maximum benefit from whatever developments may be undertaken.

## South African Railways General Managership

MR. W. HECKROODT, General Manager of the South African Railways, is retiring on December 16 after having held the position since February 24, 1950. He will be succeeded by Mr. D. H. C. du Plessis, Deputy General Manager since the latter date. The rôle of Africa in the future of the world is a subject much discussed today by economists and agriculturists, who rightly insist on the importance of transport in developing the continent and ensuring the distribution of its products to the many markets awaiting them. At such a time a special responsibility attaches to the general managership of the South African Railways, involving liaison with connecting systems in the interests of the wisest use of existing facilities and planning for future outlets and connections with a continental as well as a domestic outlook. Mr. Heckroodt and his successor, Mr. du Plessis, both began their service with the administration in clerical grades in their early teens, and this long association has earned for Mr. Heckroodt many friends whose good wishes go to him in his retirement. Mr. du Plessis brings to his new appointment the international experience he gained as leader of the S.A.R. overseas mission in 1946.

## The Transportation Club

ON Monday last the Council and members of the Transportation Club held a dinner at the clubhouse, 44, Wilton Crescent, S.W.1, to welcome Mr. Alan Lennox-Boyd, the Minister of Transport, as first President of the club. Those present, as will be seen from the list of names elsewhere in this issue, were representative of all forms of transport. The club, which was founded during the war by the main-line railways to enable nominated British railway officers to meet their American and Canadian counterparts serving here, and since the war has been conducted with a subscribing membership, has passed through a period of difficulty. In common with other London clubs it has felt the effects of higher costs and reduced spending power. Generous financial support, however, has been forthcoming from a number of important commercial undertakings associated with the transport industry, the principal executives of which have appreciated the value of the amenities offered by the club, particularly as a meeting place for transport people from many parts of the world. Mr. Lennox-Boyd expressed keen interest in the club and promised his full support for it. He said he would use his influence to endeavour to secure the return to membership of railway officers who for one reason or another had left the club.

## Nationalised Industries

THE former Chairman of the Iron & Steel Corporation, and sometime Member of the British Transport Commission, Mr. S. J. L. Hardie, states in a pamphlet, "The Nationalised Industries" that nationalisation is a process of organic development continuing over many years, and that there can be no justification for reversing this process in a living industry. With steel and transport, he maintains, capital requirements for development are so great that only a national corporation can carry them out, if necessary re-

ardless of any immediate profit. He proposes an Independent Nationalised Industries Board to control policy, finance, and organisation, answerable to Parliament through a non-Departmental Minister; at a later stage, the Independent Board might advise the Government on the whole problem of nationalisation, a question increasingly to be decided by purely technical and financial considerations. The nationalised industries must be freed from party politics and from the threat of disintegration on a change of Government. Their several boards must be preserved from non-expert interference and the "Civil Service approach." Mr. Hardie stresses the significance of the unrestricted development of road haulage; he advocates "integration" of the nationalised railway and road freight and passenger services, for which purpose *inter alia* the B.T.C. "should be reorganised as a commercial and industrial undertaking responsible for decentralisation under regional or other grouping or divisions."

### New Zealand Railways Commission

THE New Zealand railways are transferred from Ministerial to Commission control by the New Zealand Government Railways Amendment Act setting up a management committee of five to "manage, operate and develop the railway services now carried on by the New Zealand Government Railways Department." The Commission will consist of five directors to be appointed by the Governor-General, three of them from the staff of the Railways Department or full-time employees of any service organisation, and the other two from outside the Government Service. One of the five will be appointed Chairman and another Deputy-Chairman. A General Manager of Railways is to be appointed, and, under the control of the Commission he will be chief executive officer and permanent head of the department. The Commission, whose members have yet to be named, will be expected to overhaul the system in the interests of economy, and to fix charges and fares at such levels as will guarantee profitable operation. The Government retains control of railway policy and capital development, but has delegated to the Commission responsibility for management and administration. The success of the new organisation depends on the amount of freedom left to the Commission in carrying out Government policy.

### Improvements in the "Irish Mail" Services

DURING the summer the "Irish Mail" services between Holyhead and Dun Laoghaire carried 15,000 more passengers than last year, and the handling of this extra traffic was facilitated by recent improvements at both ports. Mr. J. W. Watkins, Chief Regional Officer, London Midland Region, summarised the progress made this year and spoke of plans for next summer at a meeting held at Euston on December 1 between the L.M.R. and representatives of Irish Republic Government departments and C.I.E. These developments, reported in detail on another page, include more warning of dates on which sailing tickets will be required, and the earlier availability of these tickets. Better waiting and refreshment facilities will be provided at Holyhead, which in conjunction with the new Customs and platform facilities at Dun Laoghaire (outlined in our February 22 issue), and the better disembarkation facilities at Holyhead described in our issue of September 21, 1951, will represent a far-reaching improvement of the two terminals. Another promised facility likely to remedy some difficulties hitherto experienced at times by travellers on this route is a relief sailing from Dun Laoghaire in peak periods at 6.20 p.m. instead of 10.45 p.m. This should ensure that a ship is waiting at Holyhead for passengers arriving on the summer 5.20 p.m. from Euston. Another contribution to comfort has been made by the increased carrying capacity of the new mail vessels *Cambria* and *Hibernia*, which with the relief ship *Princess Maud* handled the heavy traffic satisfactorily. The incoming peak period was reached on July 26 when 8,387 passengers arrived at Dun Laoghaire and 3,790 departed. This was balanced on August 9 when 6,993 departed and 4,049 arrived.

### Birmingham Suburban Transport

THE problem of passenger transport in the Birmingham area is being examined by a commission of inquiry under the auspices of the Birmingham Chamber of Commerce, in conjunction with other traders' organisations. A report on the railway aspects has been prepared by the Birmingham Junior Chamber of Commerce. Its conclusion is that a commission should be appointed to investigate the reasons for the deterioration of rail passenger transport in the West Midland area. There are twenty-four detailed recommendations, including the formation of a Midland Transport Authority to co-ordinate, but not own, all rail and road passenger services in Birmingham and district, immediate provision of an amplified steam service to outer suburbs, electrification of suburban lines, investigation of the possibility of reopening closed stations in the city, and construction of halts to serve new localities. The widening of rail approaches to New Street and Snow Hill stations and the building of short links, such as New Street-Moor Street, to produce a comprehensive City network and enable cross-City services to be provided, are also proposed. The commission of inquiry suggests, however, that the proposal for a Midland Transport Authority should not be proceeded with at present, and that the substitution of diesel for steam trains, where appropriate, would be preferable to electrification in present conditions.

### Increased Production of Railway Equipment

RECENTLY representatives of the technical Press were given the opportunity of seeing in production the lately completed continuous process plant installed at Taylor Bros. & Co. Ltd. for the production of disc and solid type rolling stock wheels. The firm is a member of the English Steel Corporation Group of Companies which provided the funds required for the installation. The completion of the new plant forms part of a reorganisation scheme of the Group which includes new equipment for the production of much-needed railway equipment, cast-steel bogies, automatic couplers and laminated springs; the plant installed for spring production was described and illustrated in our issue of February 2, 1951. A dinner was held recently in Manchester to mark the opening of the new plant, which is described and illustrated elsewhere in this issue, and on this occasion Mr. F. Pickworth, Chairman of Taylor Bros. & Co. Ltd. and Managing Director, English Steel Corporation Limited, said that the plant had been installed at a cost of approximately £1,000,000 and showed the importance of the need for increased production of railway equipment by the English Steel Corporation Group of Companies for both home and overseas railways. Some 60 per cent of the output of the new plant is for the export market.

### Another Forgotten Engine

ANOTHER instance of a signalman forgetting a light engine, failing to apply the rules, and receiving no reminder from the carrying out of Rule 55 occurred on December 21, 1951, at Piershill Junction in the Scottish Region. Fortunately the results of the ensuing collision were not serious. Colonel R. J. Walker's report, which is very short as there was no doubt at all as to what took place, is summarised in this issue. As he says, there is quite a temptation at times to avoid what is often not a particularly agreeable duty, but the safety of enginemmen themselves depends on signalmen seeing that proper protection is afforded to them and, on all counts, every endeavour should be made to see that this important rule is respected. This engine is believed to have been standing for fully eight minutes and it is known that another alongside had been doing so for twenty without the rule being obeyed. We can never understand why drivers so detained, if only for their own sakes, do not keep better watch on the nearby signals and, if they see them cleared irregularly, begin whistling furiously to attract attention to the blunder. Instead of that they seem to sit in their cabs and never think for a moment that they can be forgotten, with possibly very grave results.

### Oil-Burning Locomotives for Iraq

AN interesting feature of the oil-burning locomotives recently built by Hudswell, Clarke & Co. Ltd. for the Iraq Petroleum Co. Ltd. is the interchangeability of certain components with locomotives of the Iraqi State Railways, who will maintain the engines in service. These components include the oil-burning apparatus and boiler details. The locomotives, which are described and illustrated elsewhere in this issue, will operate over the oil company's private lines, and are of plate frame construction suitably stayed. A saturated boiler is fitted and the oil-burning apparatus is of the Mexican trough type which is adopted as standard on the Iraqi State Railways oil-burning locomotives. The cylinders are fitted with renewable cast-iron barrel liners, and long travel piston valves, 8 in. dia., are provided actuated by Walschaerts valve gear. The axle-boxes and horn cheek faces are lined with manganese steel, a feature which, together with the general design of the locomotives, in which moving parts are accessible, should provide for economy in maintenance.

### Transport in Northern Ireland

THE Transport Tribunal for Northern Ireland finds that the Ulster Transport Authority has carried out satisfactorily its duties under the Transport Act (Northern Ireland), 1948, and has made commendable progress towards integrating rail and road transport. The Tribunal was directed to inquire into the operation of this Act and its administration by the Authority, and it held public sittings between March 25 and July 8. Its report (Cmd. 310, H.M.S.O., Belfast, 3s.), acquits the Authority of charges that it had not carried out co-ordination between road and rail; that it had spent too much money on premises and equipment, and that generally the undertaking had been mismanaged.

Prices had risen steeply, salaries and wages had increased and, the taxation of fuel had written off the Authority as a profit-earning concern. The overall financial situation of the Authority was the main problem facing the Tribunal.

For the first three years of operations (October 1, 1948, to September 30, 1951) the Authority had an accumulative net revenue loss of £894,406. The trading activities of the railway section showed a loss of £863,425, apart from its proportion of loan charges, £81,000 per annum. The rest of the undertaking not only paid its way, including its proportion of loan charges, but made a contribution towards the rail section.

The Authority has been struggling with advances in costs since 1948 but has effected considerable savings by integration and reform and has also improved revenue by increasing rates and fares. Nevertheless, these savings and increases have fallen far short of the figure required to offset the rising costs and have been lost sight of in the Authority's overall losses. The Tribunal believes that all the Authority's services are steadily improving and that the public is becoming more satisfied with them.

Some of the steps taken to implement the 1948 Act have been:

- (i) Bringing together headquarters staff of both road and rail in new premises at Linenhall Street;
- (ii) Amalgamating headquarters staff and reconstituting other operative staffs as transport operatives and not as rail and road operatives;
- (iii) Amalgamating, where possible, rail and road freight depots and stations and integrating the two systems;
- (iv) Bringing the several rail and road engineering works and repair shops together in new workshops at Duncrue Street;
- (v) Preparing a rates structure applicable to both rail and road ("a unique reform in transport");
- (vi) Purchasing and reconstructing the City Hotel at Londonderry; rebuilding the Midland Hotel at Belfast; re-equipping and redecorating these and the Portrush and Newcastle hotels;

- (vii) Designing and putting into service new diesel rolling stock;
- (viii) Installing mechanical accountancy at Duncrue Street offices;
- (ix) Closing unremunerative branch lines and reduction of staff;
- (x) Improving maintenance, thus prolonging the lives of rail and road vehicles.

The estimated annual savings under these heads and the increased earnings from the rise in rates and fares for 1952 were: £240,000 saved by discontinuance of some railway services; £107,000 saved by reduction in staff; £225,000 reduction in depreciation charges as a result of improved maintenance of vehicles; £920,000 increased earnings from advances in rates and fares—not sufficient to offset increased costs and a decrease in traffic.

The Authority had correctly interpreted Section 5 of the Act. If conditions had remained as in 1948 it was reasonably certain that the services as a whole could have been made to pay by 1951 and certainly by 1952. As they have changed, the duty cast on the Authority has become financially impossible to perform, if the maintenance of a transport system by both road and rail is to be its paramount duty.

The total increase as a result of rising costs and taxation for 1952 compared with 1948 would be £1,322,000 and at the present rates these increases will total £1,402,000 for a full year. The loss for 1952 is estimated to be £475,000, of which £249,000 are operative losses after taking into account a loss of £355,000 on the railways, £338,000 for increased fuel tax and making provision for £226,000 for loan charges and capital redemption. On these figures and at the present level of costs and taxation, the Authority has not even a fighting chance of discharging its accumulated deficits or of balancing its revenue account, and "so far as the criticisms of the Authority have been based on their financial losses," comments the report, "we think they must be exonerated."

The evidence satisfied the Tribunal that the Authority's freight transport is efficient and convenient, and though the integration of road and rail is a slow process not yet complete, substantial progress is being made.

The Tribunal has not been able to discover good reasons for challenging the expenditure of £217,409 on the Linenhall Street headquarters of the Authority beyond the fact that the reconstruction was on a cost and percentage basis. Of Duncrue Street Workshops, also the subject of criticism, it believes that they will fully justify themselves and improve the efficiency of the road fleets and railway rolling stock. The Authority should be permitted to carry out work for public bodies at these shops as any additional work undertaken would reduce costs per unit by spreading overheads.

As a result of research in diesel traction a scheme had been devised which aimed at replacing steam trains by multiple-unit diesel trains powered by the flat diesel engines used in the Authority's buses. Many of the Authority's existing railway coaches were more than 45 years old and needed replacement. It was proposed to replace them by these diesel trains, in the first place on the Belfast-Bangor line. Passengers by rail from Bangor have to alight at Queen's Quay Station, the terminus of the former Belfast-County Down Railway, on the east bank of the Lagan, but those by bus are brought into the heart of the city. The Authority had suggested that the new diesel trains made it possible to put the Belfast Central Railway into operation again and run the Bangor trains into the city to the Great Northern Railway terminus.

The public relations branch of the organisation should be reorganised and a public relations officer appointed. The Board should be constituted as at present, but the chairman might be either a part-time or a full-time member. He should not perform the executive duties appropriate to the general manager. It would promote efficiency if a chairman or other members of the Board could be found with some technical transport experience. The Tribunal should sit every year after the accounts of the Authority for the previous year have been published, to hear a report from the Authority on the year's work.



## U.S.A. Railway Traffic Trends

**A**BOUT twelve months ago the judgment of U.S.A. railway managements was that freight and passenger traffics would vary little in 1952 from the 1951 level. That would have been a happy state of affairs, because last year the volume of freight business was the greatest since the peak of 1947 and the postwar decline in passenger travel was halted. Instead the present year will go down in history as one of abnormal traffic fluctuations. It will be instructive to see how the railways coped with these sudden changes in traffic requirements, for the United States is the last stronghold of private enterprise in railway development on a large scale, with 125 independent companies owning and working 226,000 route miles of line. Amid the welter of individual effort, the Association of American Railroads acts as a common agency when things have to be done in co-operation such as the control of wagon exchange, the compiling of statistics, or the preparation of an appeal for increased rates and charges. For all practical purposes, the Association activities convert the railways into a unified operating machine.

Over a period of 40 years the A.A.R. Bureau of Railway Economics has studied transport problems and circulated useful information about railway trends and prospects. Its forecast for 1952 was that traffic levels would be high, with revenues beating all existing records, though such a situation might not spell satisfactory net earnings. Soon after this opinion about the future outlook was published, the Interstate Commerce Commission authorised the railways to increase freight rates and charges by 15 per cent (with certain exceptions) from May, 1952, until February, 1954. The Commission estimated that the advance would yield \$635 million in a complete year, provided that traffic volume did not fall much below the 1951 level. In June the calculations of the A.A.R. and the I.C.C. were upset by strikes of steelworkers and iron ore miners which lasted for 52 days until late July.

The output of many industrial plants was reduced for two or three months and plans for moving a record quantity of ore from the north-west ranges were ruined. The shipment of 23 million tons of ore was lost and cannot be made good before navigation closes in December. During the eleven weeks to October 4, after the labour troubles were settled, there was a gain of 3½ million tons of ore by the Great Lakes route over the same period of 1951. The all-rail carryings of ore from the Lake Superior region seemed at one time likely to expand, but were actually 2½ million tons less during these eleven weeks.

The railways were hit hard this year by a slump in coal production. To October 4 the output of bituminous coal was 354 million tons, a drop from 1951 of 46½ million tons, or 11·6 per cent. Later in the month a week's stoppage of work at many mines curtailed rail forwardings to a serious extent. Already coal exports overseas, which were brisk during the first quarter of the year, had declined at a steep rate from April to September.

### WAGON LOADING

Apart from the effects of labour disputes, wagon loadings did not come up to expectations this year. During the 42 weeks to October 18, the U.S.A. railways dealt with 30,550,230 loaded wagons, compared with 32,957,790 in the same period of 1951. The decrease of 2,407,560, or over 7 per cent, was spread over all groups of commodities except grain and grain products, which filled 8,120 more wagons. Bountiful harvests of winter and spring wheat, soya beans, and maize threw a great strain on the stock of box wagons. October is the peak loading time of the year for that class of wagon and about the middle of the month there was an average daily shortage of over 8,000 "boxes."

Because of the scarcity of steel, the railways installed only 3,450 new wagons of all classes in September, a third of the number being box wagons. Since 1950 the railways have aimed at putting 10,000 new wagons into traffic every month, but the average number installed last year was 7,310. In the third quarter of 1952, the total number of wagons added to stock was 12,038, while 18,700 old wagons

were withdrawn from service. At the end of the quarter the number of wagons on order was 95,400, but probably deliveries will be very slow unless the Government makes a special allocation of steel to wagon builders.

Locomotive building programmes were not affected in such a serious manner. The delivery of 188 new diesels in September brought the total number installed during the twelve months to September 30 up to 2,514. The railways also put two new steam locomotives into service in September and withdrew 378; in the twelve months they installed 17 steam engines and scrapped 5,911. The diesel goes forward irresistibly.

The disturbed state of some of the basic industries is bound to have an adverse effect on 1952 railway operating statistics. For instance, in seven of the first eight months of this year fewer net ton-miles were worked in the average serviceable wagon day than in 1951. In August the average wagon load was fully a ton smaller and on an average a wagon produced two wagon miles less per day. It will be a pity if these backward moves are signs that a halt has come to the progressive improvement in U.S.A. railway operating results, which we have mentioned frequently in recent years.

### PASSENGER TRAIN SERVICES

The outbreak of the Korean war in 1950 gave an impulse to both freight and passenger train traffic. By December, 1951, the effect of war conditions on freight movement faded out, but journeys on Government service continued to swell the volume of passenger travel. Last year, passenger-miles were 9 per cent higher than in 1950 and passenger takings were 10·7 per cent greater. For the eight months to August, 1952, takings increased 4·3 per cent, in spite of a slight decrease in July and a further decrease of \$3½ million (3·9 per cent) in August. In these eight months payments for the carriage of mail and express by passenger train rose by \$77 million, or 37 per cent, largely owing to increased charges authorised by the I.C.C. in 1951. For years the railways carried these traffics at a loss. Though the increases in receipts this year look substantial, it is uncertain whether the railways will earn any profit from passenger train services. Last year operating expenses related solely to these services exceeded the passenger train revenue of \$1,400 million by \$129 million, although 11,000 fewer miles of road were operated in passenger service than in 1950. Since 1939 passenger services have been withdrawn from 32,500 miles of road, but there appears to be no end to the deficits incurred in working the 139,000 miles which remained open in 1951.

### THE FINANCIAL POSITION

While traffic statistics look unpromising, the U.S.A. railways as a whole strengthened their financial position during the critical months of June, July, and August. The A.A.R. statement of revenues and expenses for the eight months to August shows four striking changes, compared with the same eight months of 1951: (i) An increase of \$46·6 million in operating revenues (0·7 per cent); (ii) a decrease of \$47 million in operating expenses (0·9 per cent); (iii) a fall in the operating ratio from 79 per cent to 77·8; and (iv) an increase in net railway operating income of \$83·7 million (15·9 per cent).

All Regions except the Northwestern shared in the betterment of net earnings before charges denoted by (iv) above. The lion's share fell to the Central Western and Southwestern Regions, remote from the main centres of labour disputes. The Santa Fe increased revenues 6 per cent, cut expenses 6 per cent, reduced its operating ratio from 77 to 71 per cent, and raised its net operating income from \$32·7 million to \$46·7 million, or by 43 per cent. The experience of the Pennsylvania, operating in the Eastern steel and coal areas, was different. It had a decrease of nearly 3 per cent in revenue, cut expenses by 5 per cent, reduced its operating ratio from 86·4 per cent to 84·5 and lifted net operating income from \$34 million to \$45 million, or by 32 per cent.

Most of the railways were quick to cut their costs when strikes began to interfere with traffic. In June operating expenses for all U.S.A. lines were reduced by \$29 million



(4.3 per cent), in July by \$46.7 million (6.9 per cent) and in August by \$35 million (5 per cent). At the middle of August the total number of employees was 1,219,300 compared with 1,297,060 in August, 1951. The railways had dispensed with the services of 77,760 people, almost 6 per cent of the 1951 staff, but re-engaged some 14,000 by mid-September. These economies, with the benefit from increased rates and charges, may help the railways to higher net earnings by the end of the year, if downward traffic trends are not accentuated. Volume of business is only one of many factors which influence the rate of return on property investment. Though the 1951 traffic volume was nearly 10 per cent above 1950, the rate of return dropped to 3.7 per cent from 4.2. The statements of revenues and expenses for the last four months of the year will be awaited with keen interest.

### The Canterbury & Whitstable Railway

FOR a small railway, which was never of great traffic importance, the Canterbury & Whitstable has unusual claims on the historian. Foremost of these is the fact that it was the first railway in the world to convey ordinary passengers in steam-hauled trains, and the only one to do so in the "Georgian period." George IV died on June 26, 1830, before the far more important Liverpool & Manchester Railway was opened. Many well-known railway pioneers were associated with the building of the line. It was projected by William James (1771-1837), the land agent and engineer who endeavoured (usually unsuccessfully) to promote many early railways, but who nevertheless has been acclaimed by some as the "Father of Railways." He secured local support and the Canterbury Rail Road Company was formed in 1824. On its behalf James surveyed the line, and it was his plans which accompanied the application to Parliament for powers to make a "Train Way or Rail Road."

Despite considerable local opposition, the Act received the Royal Assent on June 10, 1825, incorporating the Canterbury & Whitstable Railway Company. George Stephenson was then appointed Engineer, but acted mainly through assistants, though he was responsible for proposing (and securing powers by Act of April 2, 1827) to alter the Canterbury approach and terminus. He sent Joseph Locke (1805-1860) to lay out the line, and subsequently John Dixon (1796-1865) to superintend its construction. After suspension of the works in 1827 through lack of funds, Robert Stephenson took charge and completed the undertaking. Joseph Locke, Robert Stephenson, and Isambard Kingdom Brunel were described in *The Times* of September 21, 1860, as forming the "Triumvirate of the engineering world." Two were associated with the building of this railway, and Brunel used the incline through the tunnel near Canterbury to make tests, when his proposal to take the Great Western Railway through Box Tunnel was being criticised.

The 828-yd. Canterbury Tunnel, at Tyler Hill, has been stated many times by writers during the past 40 years to have been demanded by the directors as a passenger attraction. Contemporary accounts, and the company's surviving minute books and letter books, lend no support to the story. It seems clear that the tunnel was driven as a matter of engineering necessity, and was fortuitously the first railway tunnel ever used for passenger traffic. It was begun on October 31, 1825, and was driven from both ends. When the headings met, on May 13, 1827, it was found that the alignment had been preserved within 1 in. The railway was opened with ceremony on May 3, 1830, and public passenger and goods traffic began on May 4. The first season tickets in the world were issued, in March, 1834. As the line was severely graded (maximum 1 in 28) stationary engines and cable traction were employed until 1846, but the pioneer Stephenson-built locomotive *Invicta* was used from the opening at the Whitstable end. The engine and tender cost £635. At the opening ceremony it was driven by Edward Fletcher, who afterwards achieved fame as the Locomotive Superintendent of the North Eastern Railway from 1854 to 1882. It was the first ever built with the

familiar arrangement of outside cylinders at the leading end, but was not entirely successful and was advertised for sale in September, 1839.

After an independent life of nearly twenty years, the railway was leased to the South Eastern Railway from September 29, 1844, and completely absorbed by Act of August 4, 1853. Meanwhile, the S.E.R. had reached Canterbury in 1846, and the Whitstable line was relaid, and reopened with locomotive traction throughout on April 6, 1846. By reason of the small dimensions of the tunnel, special rolling stock had to be used, and the locomotives working through it were fitted with specially low funnels. The line was closed to passengers from December 31, 1930, and now has been abandoned after a working life of 122½ years. A chronological map is given on page 623, and the events of the closing day are recorded in our news section.

### The Indian Railway Inspectorate, 1951-52

THE report of the Chief Government Inspector of Railways, Indian Ministry of Communications, for the year ended March 31, 1952, shows that though there was no change in the organisation of the Railway Inspectorate during that period, it was realised that readjustment of the jurisdiction of the inspectors to suit the recent regrouping of the railways was inevitable. The total route-mileage under the inspectorate was 34,034, of which 97 per cent was owned by the Government. During the year 23,618 miles, or 69 per cent, were inspected, 50 per cent of these latter figures being subject to detail inspection in company with the General Managers concerned.

Only 28 miles of new line were inspected before being opened to passenger traffic in the year under review, and 26 miles of existing line were doubled and passed by inspectors. Inquiries into 20 accidents were held, compared with 23 in 1950-51 and 16 in 1949-50. Of the 20, six were cases of fires in passenger trains, including one caused by the flashing over of the traction motors of an electric train, and another by sagging overhead traction wires having come into contact with the roofs of passenger coaches. Five were collisions involving passenger trains, eight were derailments of such trains, and one involved a collision between a passenger train and a lorry at a level crossing.

Among the more serious collisions were the following. At Darbhanga, on the Oudh Tirhut Railway, a passenger train entering the station was in side-collision with a shunting engine hauling a goods rake advancing over an uncoupled crossover. As a result 11 persons were killed and 16 injured. The inspector recommended that the points of the crossover be coupled forthwith and that the station be remodelled so as to isolate its passenger running lines.

A passenger train standing in Jhilmilli Station, Bengal-Nagpur Railway, was run into by eight bogie wagons and the brake van, which had parted from the rest of a goods train, because of a broken coupling, and had run backwards down a 1 in 80 gradient. The goods train was vacuum-braked and the nine vehicles had come to rest on the gradient after the parting. The brakes had leaked off after a time, and the guard, relying on his van hand-brakes to hold the rake, had failed to apply the hand-brakes on the wagons; thus the vehicles started to roll down the gradient and into the station. One person was killed and 43 were injured. The inspector recommended the provision of catch-sidings at stations approached by long and steep falling gradients.

Of the derailments, one was caused by a truss bar having come adrift from a wagon of a previous goods train and dropped on the track. Two persons were killed and 32 were injured. The inspector recommended fitting safety brackets to prevent loose truss bars from falling on the track. Another derailment resulted from the collapse of a 3-ft. arch culvert as a result of abnormal rainfall and consequent flood; there were 10 fatalities and 29 injuries. In a third case, nine vehicles of a mixed train became derailed because of the breaking of a wagon axlebox; 11 persons lost their lives and 22 suffered injuries. Cast-steel axleboxes were recommended in this instance.

## LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

### Publicising Nationalised Industries

November 21

SIR,—There appear good grounds for joining issue with Sir Michael Peto in regard to his letter of November 6.

The average railwayman certainly does not look on the general public as his "employer and master," nor is it in fact the case. On the contrary, since railwaymen pay rates and taxes *pro rata* with Sir Michael Peto and his like, they are apparently equally their own "employers and masters." On the score of handing bouquets to each other, would it not be terrible if the Arsenal or Chelsea crowds were charged with being "mute of malice"? Relegation would soon be in sight.

Yours faithfully,

W. ROSE

19, Darley Road, Manchester 16

### Regional Traffic Densities

November 22

SIR,—The author of the interesting article on the Eastern Region in your issue of November 7 quotes details of comparative route and track mileages and in his second paragraph says that the density of traffic in the Eastern is fully 50 per cent above that in the North Eastern Region. I think this may mislead the majority of your readers. The figures of route miles which the author of the article has used are those of the geographical Regions, and the train miles into which I assume route miles have been divided will have been limited to those which were worked in Eastern and North Eastern Motive Power Areas by men stationed in those Areas.

A more realistic picture is presented by relating the route miles of each Operating Area to the total mileages worked within that Area. Information made available to me shows that so far as freight train miles are concerned Eastern Operating Area density is greater by 2.5 per cent than North Eastern Operating Area density. If wagon miles are used instead of freight train miles, the density of the Eastern Operating Area is 13.6 per cent greater, due to a heavier average train load. As passenger train miles and net ton miles in Operating Areas are not calculated, I can obviously produce no derivatives.

Yours faithfully,

A. P. HUNTER

Royal Station Hotel, York

### The Late Dr. G. V. Lomonosoff

December 1

SIR,—Whilst, as your editorial and obituary notice record, Dr. Lomonosoff was a railway and locomotive engineer of eminence, it was not realised by many, who did not know him, that he was a very sound practical engineer as well as a master of mathematical analysis. It was, however, the combination of these qualities that led to his eminence, and that not only in the country of his birth.

It is, nevertheless, as a pioneer and master of the art of locomotive testing that he will best be remembered. He it was who first made a practical success of the application of sound scientific principles to the testing of locomotives; and the essential feature, namely testing in controlled conditions, is the basis of sound locomotive testing as carried out today in many parts of the world, largely due to the influence of his associates and pupils.

By those of us who not only were following in his footsteps, but also were privileged to know him personally, his passing will be doubly mourned, depriving us not only of a pre-eminent colleague, but also of a friend and a delightful host who gave us the benefit of his wide experience

in many spheres of life, for he had lived fully an adventurous life in many parts of the world.

Only once have I known him at a loss: this was when a well-known British C.M.E. said to him "You know, Professor, in this country trains are pulled by locomotives, not by differential equations." He was too courteous to reply as he might have done.

We shall not see his like again.

Yours faithfully,

D. R. CARLING,  
Superintending Engineer

The Railway Executive,  
Locomotive Testing Station, Rugby

### Unheated Trains

December 1

SIR,—As an ex-railwayman, I am always loth to direct criticism at the Railway Executive, for I fully appreciate the many difficulties with which the railways have to contend.

In common with other travellers on the 7.15 a.m. High Wycombe to Marylebone, I underwent the unpleasant experience of travelling up to London during the unusually cold weather at the beginning of last week on trains in which not a vestige of heating was provided. Although it seemed that the attention of the Railway Executive should be drawn to the discomfort undergone by the travelling public, I felt that it was useless to write an ordinary letter of complaint in view of my association with the railways, and sent off the following with apologies to the Ministry of Wool:—

"A bitter cold November morn,  
When travellers up at crack of dawn,  
Prepare to take their early ride  
And pray it may be warm inside.  
Their hopes, of course, are all in vain:  
There's no steam heating in the train.  
Small wonder that the poor things bleat,  
'There is no substitute for heat!'"

Yours faithfully,

C. E. NORLAND

"Claremont," Hill Waye, Gerrard's Cross

### A Time Recovery Achievement

December 1

SIR,—Last week, in the company of a good many notable persons who were also the guests of Vickers-Armstrongs, I travelled by special train from Kings Cross to Newcastle, there to watch the launch of t.e.v. *Maori* by Princess Margaret. We all came back the next day by the same special with the same dining car crew that took us North.

Simply because I rank it a good thing to render tribute where and when it is due, I should like to log down my praise of the excellent lunch and excellent dinner served by British Railways. It is true we had the chef who normally works the Royal Train administering to our needs, and no doubt all those concerned had determined it should be "a slap-up show." It was. And because it was so good, gratitude and admiration compel me to pay my tribute.

Coming South, we were 21 min. late leaving Grantham, where we changed engines. Our new driver quickly set about making up arrears and for long spells he maintained a steady 80 to 85 m.p.h. It was a most exhilarating performance and to that driver, and his fireman, there is due great credit for his enterprise and initiative in making up the lost 21 min. and bringing us to a stop at Kings Cross dead on the fixed schedule. Only two passengers bothered to congratulate him.

Yours faithfully,

C. M. SQUAREY

"Pixton," Forest Row, Sussex

## THE SCRAP HEAP

### Tractive Effort

The fact is that, pound for pound, it is easier to move a loaded freight car than it is to push a baby carriage. Steel wheels rolling on steel rails move more with less effort. That's why railroads continue to haul the bulk of the nation's heavy freight—particularly over long distances.—From an Illinois Central Railroad advertisement.

### Dining in the Train

Is not the idea of serving a traditional meal in a train out of date, a relic of the times when men believed they could not get through the day without three hot meat meals? Would not most travellers today prefer a really good sandwich, a drink, and some fresh coffee that could be served without all the annoying fuss that even those expert and agreeable train stewards cannot avoid?—From "The Manchester Guardian."

### Off-Licence Anomaly

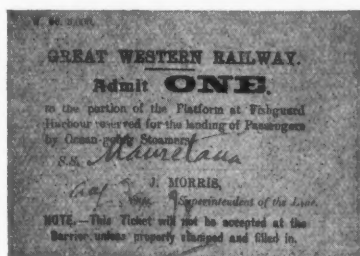
The fatuity of our licensing laws is underlined . . . as the Hotels Executive of British Railways announce that packed meals can now be obtained on the train.

A traveller ordering one of these boxes can ask for wine, beer or spirits to be included. He will get his drink only if the train leaves during licensed hours.

Explain the Hotels Executive: "We have to follow the same rules as off-licensed premises. You can order your box when you like; but we can only deliver it during permitted hours."

Yet, if there is a restaurant car on the train the traveller can buy a drink there as soon as the train starts to move, whatever the time.—From the "Evening Standard."

### "Mauretania" at Fishguard



On August 30, 1909, the "Mauretania" inaugurated the short-lived experiment of calls by ocean liners at Fishguard. The above ticket, issued on that occasion, was sent us by Mr. D. J. W. Brough

### Smoke without Fire

Commenting on the item in our November 14 issue on the old C.P.R. locomotive preserved in Vancouver, a correspondent, Mr. R. C. Pickerell, sends us a cutting from the local press, received from a relative in Vancouver, from which it would appear that Kitsilano residents were startled one afternoon recently when they saw black smoke billowing from the big stack of

old engine 374 in the Cornwall Street park. They thought it was preparing to shove off, or that some boys were trying to get steam up in the tired boiler, but all they found were cameramen.

The film men had got a smoke bomb from the R.C.A.F. and dropped it down the stack for realism. Then they put a camera on a "dolly" and drove past the locomotive while the "engineer" waved madly. Some day, when the picture is finished, it will look as if old 374 is steaming merrily along just off Cornwall Street.

### The Chain Boy

A chain boy retired yesterday. But 12 people under 40 when asked what a chain boy did replied: I don't know. Eventually London Transport gave the answer: He was the boy who in the old days took the horse from one end of a tram to the other at the terminus. The chain boy who retired was 70-year-old Joseph John Childs, who began work in 1902 on London's horse transport, and ended up as a bus-driver at London Transport's Forest Gate depot.—From the "News Chronicle."

### Closing Isle of Wight Railways

It is more than doubtful if Isle of Wight railways have ever been a paying proposition, but the private enterprise which ran them under the aegis of the Southern would never have been allowed to close down without an Act of Parliament, which no Government would have dared to pass.

The companies, like many another big business concern, had to take the rough with the smooth, and could not expect to make profit on every department of their activity.

The number of branch lines scrapped since nationalisation without regard to public utility is a scandal; the prospect of the Isle of Wight without railways is unthinkable.—From a letter to "The Sunday Times."

### Fog on the Line

He wandered, like old Wordsworth's cloud,  
Uttering his inmost thoughts aloud;  
"Oh, that someone would make it clear

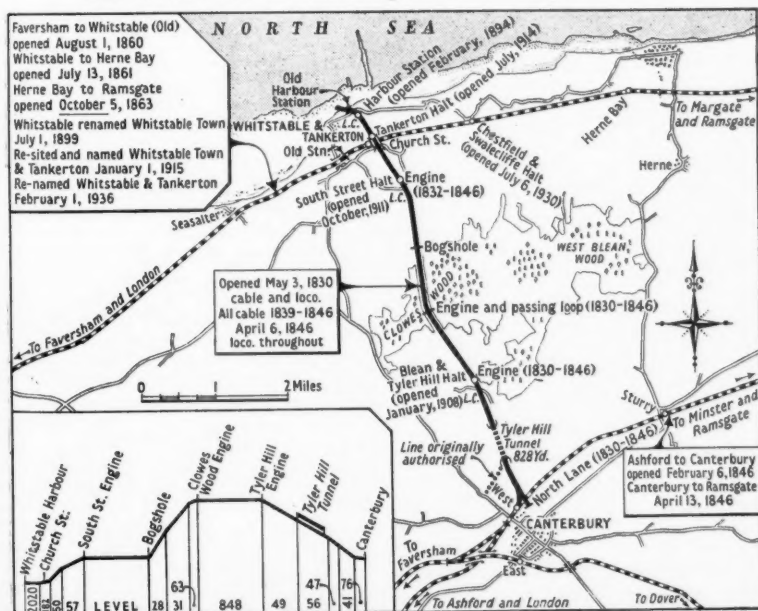
Precisely where we go from here,  
For, of a truth, it seems of late  
That we, the shuttlecocks of fate,  
The sport of every wanton wind,  
Will need much light our way to find.  
Mark well the worn, decrepit signs  
My ravaged visage bears; these lines  
Were never carved by kindly Time—  
I have grown ancient in my prime."

Sadly he scratched his snowy pow:  
"How sits the wind in Whitehall now?  
Must we new odysseys begin,  
Or is this where we first came in?  
By doubts assailed, by fears dismayed,  
Heaven, befriend me! Angels, aid!  
Illuminate my night—in fact,  
Explain to me the Transport Act!"

SCORPIO

£ 2

### The World's First Steam-Operated Passenger Railway



Chronological map of the Canterbury & Whitstable and adjacent railways. This pioneer line has just been abandoned (see editorial article, page 621)



## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### AUSTRALIA

#### New Trans-Australian Coaches

On November 18 the final trial run of new rolling stock for the Trans-Australian line were made between Port Pirie, South Australia, and Kalgoorlie, Western Australia. Each of the two trains of nine all-steel coaches is made up of six sleeping cars, dining car, lounge car and a brakevan. They are painted wine-red and are air-conditioned. The order for the stock was secured by Wegmann & Co. of Kassel, Germany. The brakevans were illustrated in our November 7 issue.

### CANADA

#### Teletype Wagon Recording

The C.P.R. has accelerated freight movement in the west by a teletyped wagon record between Fort William and Moose Jaw and between Calgary and Vancouver. The service will be extended from Moose Jaw through Swift Current and Medicine Hat to Calgary in 1953. Later, expansion is planned for the secondary main lines.

The first teletype recorder and wagon tracing system was introduced in Canada early in 1950 when the main line from Windsor (Ontario) to Montreal, 686 miles, was equipped. The system was found to work well on this line over which much United States traffic travels from the Mid-West States through Canada to New England.

There are now 23 teletype machines on the western lines of the C.P.R. Ten are in yard offices between Fort William and Moose Jaw, five between Calgary and Vancouver, three in district transportation offices at Moosejaw, Calgary and Vancouver, and the remainder at the Winnipeg headquarters. Winnipeg is also linked on a direct inter-department teletype circuit with the system transportation headquarters situated at Montreal and the eastern region office at Toronto.

### UNITED STATES

#### Express Train Accelerations

The "Fast Mail" of the Chicago/Burlington & Quincy Railroad, which hitherto left Chicago at 7.50 p.m., now leaves at 9 p.m. and reaches Council Bluffs Transfer at 4.45 a.m., covering the 493 miles in 7¼ hr., an acceleration of 3 hr. 55 min. The train now carries mail only, but previously it carried coach passengers also. Omaha is reached at 5.30 a.m. This is not the fastest train to Omaha, as the "Denver Zephyr" (5 p.m. from Chicago) reaches Council Bluffs in 7 hr. 12 min. and Omaha in 7½ hr., and the "Californian Zephyr" (3.30 p.m. from Chicago) reaches Omaha in 8¼ hr. In the reverse direction the "Fast Mail" still carries coach passengers, and now is scheduled to

make the Omaha-Chicago run in exactly 9 hr.

On the Illinois Central System the so-called "Northern Express" (calling at almost all stations from New Orleans to Chicago and taking 31¼ hr. for the 921 miles) has been accelerated 8 hr. 25 min. by the omission of many intermediate stops, and has been renamed the "Creole." Leaving New Orleans at 8.30 p.m., it now reaches Chicago at 7.50 p.m. instead of 4.15 a.m., so giving a useful afternoon service from Kentucky and Southern Illinois towns to Chicago. The fastest trains over this route are the streamlined coach train "City of New Orleans" and the all-Pullman "Panama Limited," allowed 16 hr. 25 min. and 16½ hr. respectively in each direction between Chicago and New Orleans.

#### Luggage Charge

In the November 7 issue it was stated that a charge had been levied for the carriage of luggage in advance or checked in the baggage car of the train on which passengers travel. Although a fee of 25 cents per hand piece and 50 cents per trunk checked in baggage service was authorised, under baggage tariff B.G. No. 10, issued May 26, effective from July 1, this arrangement was suspended by Supplement to the tariff on June 30 to and including January 31, 1953, unless otherwise ordered by the Inter-State Commerce Commission.

#### Burlington "Gallery" Coaches

The double-deck, or "gallery," coaches introduced by the Chicago Burlington & Quincy Railroad for Chicago suburban passenger services have proved so successful that ten more are on order. Each car is 85 ft. long and seats 148 passengers, those on the upper deck on either side of a central well, in "galleries" which give the cars their name.

The advantage of them from the railway operating point of view is reduced length, which requires less storage space for the trains in off-peak hours, and in the weight of trains in relation to their passenger capacity. The measure of public appreciation is seen in an increase of 7.76 per cent in the number of suburban passengers carried by the Burlington in 1951, compared with 1950, and 9.94 per cent in revenue from season tickets.

### ITALY

#### Rise in Goods Traffic

During the year ended June 30, State Railways goods traffic rose considerably, despite severe road competition. For the first time since the war, traffic exceeded that of the last full peacetime year before 1940. Against 11,554,000,000 *tonne-km.* in 1939-40, the 1951-52 figure was 12,026,000,000, 7.4 per cent over the 1950-51 figure and 4.2 per cent higher

than the 1939-40 total. The rise in 1950-51 and 1951-52 is the more remarkable as it coincided with the effects of the increase in goods rates introduced in February, 1951.

Tonnage originating has not attained the prewar level, though hauls are longer because of changes in the location of factories, marketing centres, and so on.

### SPAIN

#### French-built Electric Locomotives

The first of 20 3,600-h.p. Co-Co electric locomotives built by Alsthom has been delivered to the National Railways. Sixty more of this type are being built in Spain, of parts supplied by Alsthom.

#### Zamora-Corunna Link

More than half of the new line linking Zamora with Corunna, a distance of 288 miles, has been completed. It is expected that the whole will be open to traffic in 1954.

### ALGERIA

#### Problem of Deficit

The deficit of the railways involves a burden of fr. 7,350 million on the country's ordinary budget for 1952. The Governor-General said that so great a deficit could be met neither by administrative reforms nor by financial aid from France. Nearly half the deficit originated from the working of the narrow-gauge lines, and it was only reasonable, he added, to ask whether the retention of those lines could be justified.

### FRANCE

#### Perishable Traffic from Cavaillon

Cavaillon in the Mediterranean Region of the S.N.C.F. is an important centre for the despatch of soft fruit and vegetable traffic. During one day in August 165 wagons, containing 985 *tonnes*, were despatched to different destinations, some 200 *tonnes* being for export to Germany, Switzerland and Great Britain.

During the whole of 1951 some 102,000 *tonnes* of fruit and vegetables were despatched from Cavaillon, 77,000 *tonnes* by rail and 25,000 *tonnes* by road. Of the total, 13,000 *tonnes* were for export, nearly all by rail.

#### Gantry Cranes

In accordance with its policy of standardising lifting and handling equipment, the S.N.C.F. has designed standard types of gantry cranes for stations and depots, one to lift 10 and the other 20 *tonnes*. Each of these could be adapted to operate over single or double track; with the first the track on which the gantry moved would have a gauge of 27 ft. 3 in. and with the second of

40 ft. 4 in. The maximum height of the crane hook above rail level is 20 ft. 4 in., whilst the horizontal distance spanned varies from 20 ft. 8 in. to 33 ft. 9½ in. according as one or two tracks are involved.

Electric power normally is available, but a hand-operated type has also been designed. The electrically-operated gantry can lift at the rate of 82 ft. a min. if the load is not more than 3, and at nearly 20 ft. a min. if the load is more than 3 tonnes. The gantry can move along its track at the rate of 98 ft. a min. whilst the crane hook can move sideways at 65 ft. a min. A 25-h.p. motor is used for the lifting mechanism; for transverse movement of a load a 3-h.p. motor is available and a 15-h.p. motor to move the gantry along its track.

## HUNGARY

### Mobile Testing Car for Structures

The State Railways are now using a specially designed four-wheel railcar which is a complete mobile X-ray laboratory for detecting faulty welds or other flaws in bridges and other structures. A short wheelbase has been adopted deliberately to enable the vehicle to enter the smallest shops and sidings.

The car is equipped with Seifert X-ray apparatus which can be lifted by a rotary crane. The apparatus is fitted with a 250 kV., 10 mA., bi-polar tube

and a 150 kV., 10 mA., single-pole, long-anode tube, two transformer rectifier tubes as well as cooling oil and water pumps. The vehicle contains a completely furnished darkroom, work-rooms and sleeping accommodation for a staff of four. Because of the sensitivity of the anode plates, the car has soft-spring suspension. With this apparatus steel materials up to a thickness of 3½ in. can be tested.

### Reduction of Fuel Consumption

Stringent measures introduced by the State Railways to reduce the consumption of coal in locomotive and stationary boilers, and of electric energy saved more than 8 per cent in coal consumption and over 20 per cent in electric energy consumption in 1950-51. Still better results are expected in the future.

## IRELAND

### C.I.E. Salary Increases

Salary increases of 6s. to 14s. a week have been recommended by the C.I.E. Joint Industrial Council; 2,000 C.I.E. clerical workers are involved. The application was for a 15 per cent increase. The Irish T.G.W.U. claimed an increase of 18s. a week for its members. The basis of both claims was the increased cost of living.

For the C.I.E. Board, the Staff Relations Officer estimated that the increases, if granted, would cost an additional

£178,760 in a full year. Economies had been made in all sections of the undertaking, resulting in its disemployment of 200 men and the Board would now have to consider further economies, which might include dismissal of more employees or an increase in rates and fares, or a combination of both.

### C.I.E. Supplementary Estimate

A supplementary estimate for £1,100,000 has been circulated in Dublin, making the total amount required to aid the C.I.E. for the year ending March 31, 1953, up to £2,400,000.

### Lough Swilly Railway

The Transport Tribunal in the Republic has upheld the proposals of the Londonderry & Lough Swilly Railway to discontinue all remaining rail services in favour of road services. The services concerned are between Londonderry and Buncrana and Londonderry and Letterkenny, and the total mileage is 37½.

## WESTERN GERMANY

### Credits for New Equipment

The board of management of the Federal Railways has decided to take up authorised credits to the value of D.M. 70 million for speeding up the work of postwar rehabilitation and for placing orders with firms in West Berlin for equipment for the Federal Railways.

## Publications Received

*Pioneers of British Industry.* London: Rockliff Publishing Corporation Limited, 3, Dorset Buildings, Salisbury Square, Fleet Street, E.C.4. Cloth. Demy 8vo. 9½ in. × 5½ in. 338 pp. Coloured frontispiece and over 100 illustrations. Price 25s. Beautifully produced and printed on art paper throughout, this is an ideal presentation book for youngsters between the ages of nine and fifteen. The subject matter covers advances made in all aspects of industry in these islands, providing an excellent basis from which the intelligent child can pursue a more detailed knowledge. A hackneyed approach has been completely avoided, and the profuse illustrations and lucid style of the writing are certain to appeal to the young mind, while also presenting much informative reading.

*Technisches Zentralblatt (Abteilung Maschinen-Wesen): (Central Technical Information Survey, Machine Design & Construction Section.)* Published by Akademie-Verlag G.m.b.H., Schiffbauerdamm 19, Berlin, N.W.7. Price on application. This is a new monthly section of this valuable engineering information survey, which appears under the auspices of the German Academy of Sciences, and already covers several engineering and scientific fields. It is intended to give engineers a compre-

hensive picture of what is being published throughout the world in connection with their work, to stimulate inventive capacity and direct attention to the leading points in engineering progress. In it some 385 home and foreign journals are regularly reviewed and abstracted, and it is intended to cover other branches of engineering in due course. The Electrical Engineering Section is about a year old now. There is a patent supplement and a list of the journals covered.

*Electric Lighting Fittings.*—Benjamin Electric Limited has issued a broadsheet giving details of tungsten and mercury fittings for industrial and commercial use. They include a range of R.L.M. and Duoflux reflectors, both of which find applications for outdoor lighting on railway premises. The folder is arranged so that it can be used conveniently as a wall chart when required for frequent consultation.

*Pennsylvania Railroad Calendar.*—Four Pennsylvania trains, with the industrial city of Steubenville, Ohio, in the background, are attractively depicted in colour in the Pennsylvania Railroad calendar for 1953. On the main line between New York and St. Louis, a diesel-hauled westbound freight is starting to pass an eastbound passenger train; the latter, with its twin-unit diesel and Tuscan red coaches, is seen cross-

ing the Ohio River girder bridge. A train of ore, heads south towards Wheeling, West Virginia; while across the river on the line from Powhatan to Cleveland, a steam-hauled coal train passes steelworks symbolic of the industrial regions served by the Pennsylvania system.

*The B.E.A.M.A. Catalogue, 1952-1953.* Second Edition. Published for the British Electrical & Allied Manufacturers' Association, 36 and 38, Kingsway, W.C.2, by Iliffe & Sons Limited, Dorset House, Stamford Street, S.E.1. 12 in. × 9 in. × 2 in. 1003 pp. No price stated.—The new edition of this illustrated guide for the export market to the British electrical engineering industry gains much in value from having a glossary and indices printed in French, Spanish, Portuguese, and German. The catalogue has been increased in size from 850 to 1,000 pages. It comprises three catalogue sections (Power Plant; Industry, Transport & Communications; and Domestic & Commercial), glossaries, a buyers' guide, and a trade directory showing names, addresses, telephone numbers and cable addresses of firms. Apart from its already proved usefulness as a guide for overseas buyers to the products of the British electrical industry, the arrangement and indexing of the catalogue form a comprehensive directory and source of suggestions for all who use electrical products.

## Locomotive Coupling Rods

*Factors for consideration in determining actual loads transmitted*

*(From a correspondent)*

THE design of any mechanism usually involves (a) estimation of the applied loads, and (b) the use of formula giving an accurate representation of the stress distribution set up by these loads.

In locomotive coupling rod design, for example, it is usually sufficient in the first instance to check the rod column section for (a) direct stress and (b) for transverse bending stress for locomotives operating at maximum speeds not greatly in excess of their diameter speed (72 m.p.h. in the case of a 6 ft. dia. driving wheel) and in determining these rod stresses it is necessary to base the calculations on some assumed load applied to the coupling rod.

### Determination of Loads

While the development of formulae giving an accurate representation of stress distribution set up in coupling rods by the applied loads has been carefully studied it is doubtful whether the same close study has been applied to the determination of the actual loads transmitted by the rods. The magnitude of these loads is still the subject of certain assumptions.

The A.A.R. method, applied exclusively to outside cylinder locomotives, assumes coupling rod loads to be a fixed percentage of the piston thrust and these loads are known as "steam" loads. In the case of 6-coupled locomotives, for example, the leading coupling rod is assumed to transmit 33 per cent of the piston thrust, and in the case of an 8 coupled locomotive the leading coupling rod is assumed to transmit 25 per cent of the piston thrust.

The intermediate rod of an 8 coupled locomotive is also assumed to transmit 50 per cent of the piston thrust, i.e., the "steam" load on the intermediate rod is assumed to be one-half of the piston thrust.

All coupling rods designed on the A.A.R. formula are therefore assumed to transmit loads which are a fixed percentage of the piston thrust.

As stated this assumed load distribution applies only to locomotives having two outside cylinders, but with three and four cylinder locomotives having divided drives as is common in this country, this assumed distribution of coupling rod loads will not apply. For example, it is unlikely that the leading coupling rod on a 4 cylinder locomotive in which the inside cylinders drive on to the leading axle and the outside cylinders drive on to the centre axle, transmits assumed load in accordance with that laid down in A.A.R. practice.

It is more probable that the leading coupling rod on this type of locomotive transmits only the balancing loads between the inside engine and the outside engine. It is therefore possible that

leading rods on multi-cylinder locomotives having split drives are subject to applied loads which are in the main less than loads applied to leading coupling rods on locomotives developing comparative power and having only two outside cylinders. With the latter type of locomotive more care would therefore be required in the matter of leading coupling rod design.

Although the A.A.R. method assumes that the rod loads are a fixed percentage of the piston thrust—(25 per cent—50 per cent—25 per cent) in the case of the leading, intermediate and trailing rods of 8 coupled locomotives—it is not universally agreed that these percentages reflect the actual rod loads. Different percentage values from those laid down by A.A.R. are in fact assumed by certain railways in designing coupling rods.

### Sanded Loads

An alternative assumption to "steam load" distribution of rod loads is that based on sanded loads, i.e., loads transmitted by the coupling rod when the locomotive is exerting maximum tractive effort and is at the point of slipping on a sanded rail. This assumed loading is based not on a percentage of the piston thrust of the locomotive, but on the adhesive weight of the locomotive and also on the way in which the adhesive weight is distributed, between, for example, the main driving axle and the leading coupled axle.

In this method of assumed coupling rod load distribution, one variable is that of the coefficient of friction assumed to apply to the tyre and the rail under the sanded conditions. For example, in determining the sanded load, a value of 0.25 is commonly used in this country, whereas some American locomotive rods have been designed for sanded loads based on a value of coefficient of friction of 0.3. Even higher values have been assumed and rods have been designed on the basis of = 0.5.

The design of coupling rods based on the application of sanded loads does have the advantage that the loads considered are likely to be the maximum which can be transmitted by the rod in normal operating conditions. They do not, of course, cover abnormal conditions and loads such as those set up at arrested slipping.

The foregoing indicates the basic difference between the steam load and sanded load method of assumed load distributions in the coupling rods, and this difference is such that in some cases the sanded load may be as much as 40 per cent greater than the steam load. The formulae which are used in checking stress distribution in coupling rods in themselves necessarily include assumptions and inaccuracies which im-

pose the use of safety factors as high as 10; and since rods have been known to fail even with such high factors of safety, the development of improved formulae especially for lateral stability is perhaps desirable.

Fortunately, however, the accuracy of any formula for lateral stability can be checked by laboratory tests on rods subject to a range of compressive loads of the same order as the assumed coupling rod load. Tests of this kind have in fact been carried out in America on rod column sections and this type of test can help to remove some of the uncertainty of the validity of existing formula.

The remaining factor, still the subject of assumption, is the actual load transmitted by the coupling rods on locomotives in service. Here the application of strain gauge technique would help to remove some of the uncertainty underlying present assumptions. Such tests would provide data not only to verify steam loads and sanded loading, but would also provide information on loads set up in the rods under conditions of arrested slipping. It should be possible to obtain data of this kind from tests carried out on stationary test plants from locomotives running under load.

**ROTHERHAM ROAD STATION TO BE CLOSED.**—The Eastern Region of British Railways announces that on and from Monday, January 5, 1953, Rotherham Road Station between Rotherham Central and Swinton, will be closed. Alternative facilities for passengers are available at Parkgate & Rawmarsh, Rotherham Central, and Rotherham Masburo Stations. There are frequent road services in operation in the area. Parcels traffic will be dealt with at Rotherham Central.

**CARRIER TELEPHONY FOR WORKSHOP CRANES.**—A demonstration was given recently in a large steelworks of the new B.T.H. Clear-call system of communication with crane drivers from ground level. This shop was chosen because of the large volume of traffic, and the attendant electrical and acoustical noises associated with a bank of eight open-hearth furnaces, fed by three furnace chargers and served by two overhead cranes on a runway half-a-mile long. The B.T.H. demonstration equipment comprised microphone transmitters and control box located near the furnace control panels, with loudspeakers in the crane cabs. The output from the microphone is fed through a modulator, and transmitted at carrier frequency over the normal crane-feeder conductors, the transmission being picked-up via the crane cable-collector arms, demodulated, and reproduced by the speaker-and-horn assembly in the operator's cab. Results were highly satisfactory. The type of equipment and circuit employed eliminated static interference; neither was there any fluctuation in volume from one end of the shop to the other.



## Confines of Braking—5\*

*The question examined from the angle of economics*

By H. R. Broadbent, B.Eng.

THE preceding parts having dealt with technical factors in braking, this concluding instalment considers the limitations imposed in practice on any scheme by economics.

### Economic Factors

Any change in a braking system involving extra cost must be judged on the advantages to be gained in greater safety, improvement in train handling, reduction in overlaps, or easier maintenance. The factors examined below indicate the difficulties.

**Range of Air Pressure.**—It was explained in Part 3 that, if maximum braking were required on a train fitted with cast iron brake blocks from speeds of the order of 60 m.p.h., the force available for application to the brake block must be of the order of 2.7 times that needed for the speed at the limiting value of coefficient of friction. If the ratio of loaded weight to tare is, say, 1.3, the total allowance for increase in air pressure above the minimum will be of the order of  $3\frac{1}{2}$  times the minimum.

If the brake cylinder blow-down safety valve were set at, say, 30 lb. per sq. in., a pressure of 105 lb. per sq. in. in the brake cylinder would be required at 60 m.p.h. Taking the brake cylinder safety valve at 5 lb. per sq. in. above, the brake pipe feed valve would be set at 120 lb. per sq. in. and the minimum main reservoir pressure at 130 lb. per sq. in. These are high pressures for a pneumatic system, and special measures would be required in the design.

Extra expense may be justified because the higher rate of braking might reduce the trains required for a given service. If applied to emergency braking, overlaps could be reduced and an increase of service could be run for the same maximum train speeds. Each case would, however, require justification on its own merits.

Other solutions, such as the introduction of an extra cylinder operating only above certain speeds, might be examined, but again the cost rises.

**Effect on Wheel and Tyre of High Rates of Work.**—The rate of doing work expressed as h.p. is given by the equation:—

$H.P. = 0.272 \frac{WVf}{1000}$  where  $W$ =weight (tons),  $V$ =speed (m.p.h.),  $f$ =acceleration (m.p.h./sec.).

With allowance for rotating parts the values would be about 10 per cent higher.

At 50 m.p.h., therefore, with an axle-load of 10 tons and with a rate of braking of 2.65 m.p.h. per sec., the h.p. per axle is 400. With two brake blocks per wheel, the h.p. per block is 100, a high

rate of doing work for such a small mass. The surface of the tyre under the block and the block itself are subject to high temperatures. With non-metallic blocks values of the order of 1,500° C. have been estimated\* for tyre face temperatures with a kinetic energy of  $6 \times 10^5$  ft. lb. per block at 60 m.p.h. and an applied force on the block of 3,560 lb.

The tyre suffers from the generation of high temperatures by a change in structure and hot spots resulting in the production of martensite may end in thermal checking and metal plucking.

For high speeds it may be necessary to consider some form of friction braking, i.e. disc or drum, in which the heat developed may be controlled under conditions which can be designed.

If the full rate of braking is to be worked to at the higher speeds, a mixture of friction braking and dynamic braking may be required, but both this mixture, and the drum or disc braking, lead to greater expense than the simple arrangement of block on wheel tread. They must therefore be considered in this light.

**Stresses.**—With the greater forces required to produce the higher rates of braking at the higher speeds, the stresses in the bogie structure and rigging rise to values above those normally dealt with. In consequence points of weakness may arise which would be concealed by allowances made for other reasons.

The stresses in axles and wheels will also be increased and must be considered as a possible cause for increase in dimensions.

**Rate of Wear of Blocks and Tyres.**—With steel wheels, although the amount of work which is done in braking from a given speed is substantially the same whatever the rate of braking, it does not follow that the wear of blocks and tyres will remain the same. The higher temperatures which result from the higher rate of doing work may alter the rate of wear, and the higher cost must be included in any overall estimate of the benefits to be derived from shorter braking distances and times.

**Standardisation of Parts.**—Mention has been made already of the fact that for maximum braking each axle must have a force applied to it proportional to the limiting tangential force between wheel and rail. This is taken to be proportional to the axle weight. It would be necessary, at least with most multiple-unit stock, to have a variety of brake cylinders and, possibly, lever drillings. In practice, the number is re-

duced to as few standard sizes and dimensions as are possible without great divergency from the ideal. To the degree however that there is a departure, there is a loss from maximum braking.

**Space.**—Even if all requirements for maximum braking can be fulfilled there may be occasions, as for instance on tube stock, where the limitations of space preclude the fitting of the required extra gear. The difficulty, for instance, in obtaining a straight run for the train line brake pipe is an example of the restrictions which may occur.

It will be gathered from the comments made on the various limitations that knowledge on restrictions to maximum braking is by no means complete.

The author wishes to thank Mr. A. W. Manser, Chief Mechanical Engineer (Railways) and the London Transport Executive for permission to publish the information contained in this article.

(Concluded)

**SALE OF NORTH STAFFORD HOTEL, STOKE-ON-TRENT.**—The Hotels Executive has sold the North Stafford Hotel, Stoke-on-Trent, to Frederick Hotels Limited; the transfer takes place on January 1, 1953. The hotel, which is opposite the entrance to Stoke-on-Trent Passenger Station, was operated by the L.M.S.R. from 1933 until nationalisation.

**BARCELONA TRANSPORT REORGANISATION.**—Passenger transport services in Barcelona are expected to be taken over by the municipality as soon as Government sanction to a project submitted by the city authorities has been obtained. The two underground railways will be taken over first, at a cost of 200,000,000 pesetas (£1,800,000), and their present length of 11 miles is to be extended by at least six miles during the next three years. Surface transport would be taken over at a later date. The city will issue, with State backing, a 3,000 million pesetas loan (over £27,000,000) to acquire the shares of the existing companies and to build the new lines. It is expected that work will begin next year.

**NORWICH THORPE GOODS SHED.**—Authority has been given for repairs and extensions to the roof of Norwich Thorpe Station Goods Shed. During the war the shed, which deals with 100,000 tons of sundries traffic a year, was severely damaged by enemy action. The scheme provides for replacement of a temporary by a permanent roof; as Norwich is now a zonal centre and more covered accommodation is needed, it is proposed to roof over portions of the platforms still exposed, with screens at the ends as a weather protection. The temporary awning along one side of the shed is to be repaired and extended to protect loading on to cartage vehicles, and to provide additional berths. Lighting is to be improved, with portable lamps to facilitate wagon loading.

\* "The Measurement of the Temperature of Sliding Surfaces, with particular reference to Railway Brake Blocks," by R. C. Parker, Ph.D., B.Sc., and P. R. Marshall, Ph.D., B.Sc., Proc. Institution of Mechanical Engineers, vol. 158 (1948)

\* Previous parts of this article appeared in our issues of October 31, November 7, 14 and 21

## Rolling Stock Wheel Manufacture

*Continuous process plant installed for the production of solid and disc type wheels*

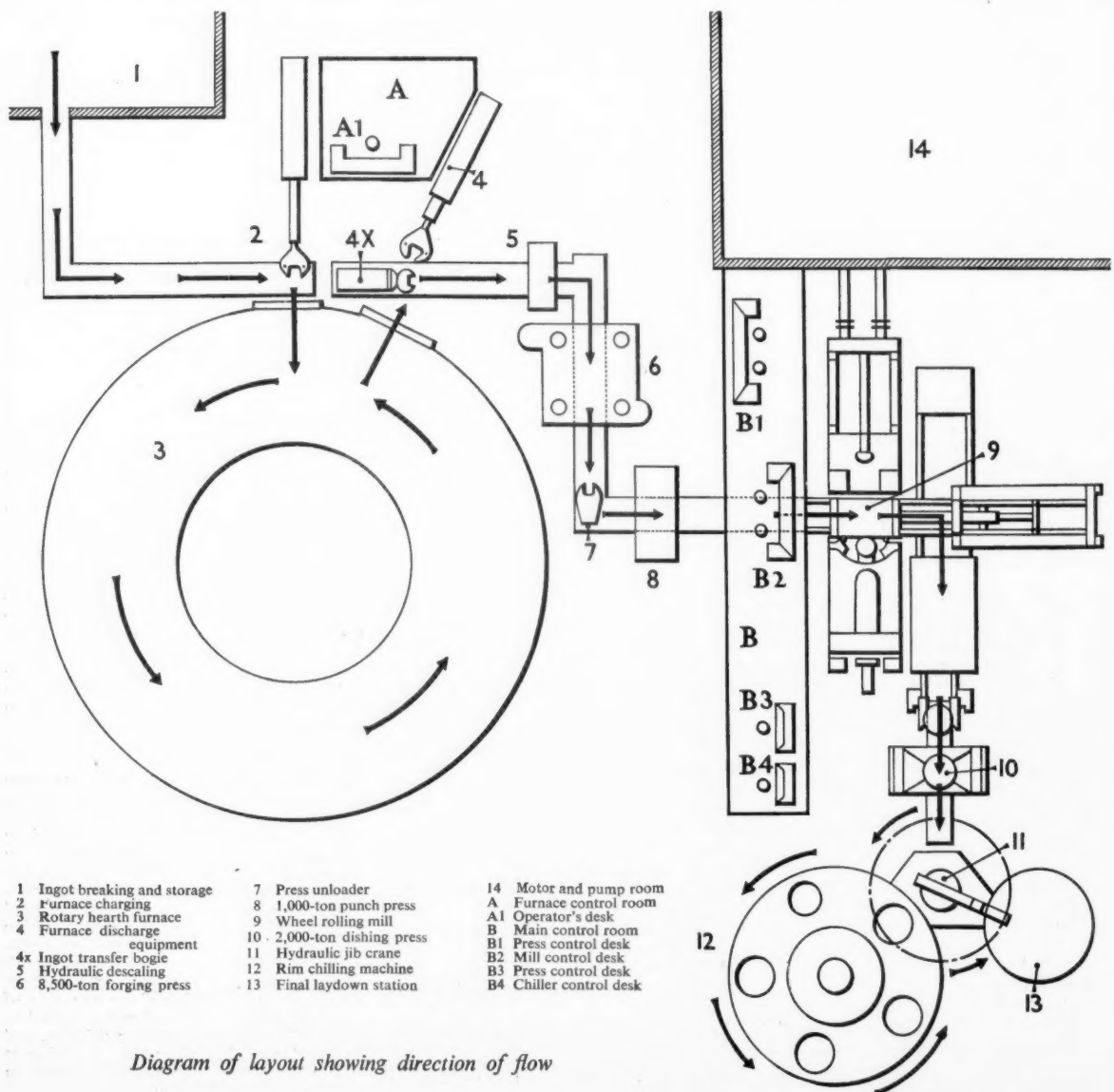
**F**OR many years Taylor Bros. & Co. Ltd. has been among the leading producers of rolling stock wheels in the British Commonwealth, and has recently put into production a completely new wheel forging and rolling plant at its works at Trafford Park. This new plant, costing over £1,000,000, has been financed by the English Steel Corporation, Limited, Taylor Bros. & Co. Ltd. being one of the members of the English Steel Corporation Group of Companies.

The new plant produces wheels from 24 in. to 50 in. diameter on tread, at a continuous rate of 60 an hour. In con-

junction with the Consulting Engineer, Mr. E. Homer Kendall, the layout of the plant and the design of the equipment was completed by the Engineering Department of Taylor Bros. & Co. Ltd., under the control of Mr. J. H. Ellis, Assistant Chief Engineer in Charge of Development. The major items comprise a 69 ft. diameter rotary hearth furnace, a forging press of 8,500-ton capacity, a 1,000-ton punching press, an electrically driven rolling mill, a 2,000-ton dishing press, and ancillary fully automatic handling plant specially designed to ensure fast production, with

an appreciable decrease in labour as compared with wheel plants of older design.

Separate 6,600 V. incoming supply cables and switchgear have been installed and the plant has self-contained hydraulic, cooling water, and compressed air services. These, together with the mill motors, generators, oil hydraulic, and lubricating equipment, are housed in a separate building of modern design. To reduce production delays and maintenance costs to a minimum, particular attention has been paid to the installation of single-purpose equipment to give





*Part of the main control room*

reliable service under conditions of continuous operation.

A distinctive feature is the extensive use of special manipulating machinery fitted with individual oil-hydraulic units. Economies in power have been effected by the use of air-loaded accumulators in conjunction with the main hydraulic plant to regulate the operating pressure in accordance with the section being made. Power-operated controls and automatic equipment are incorporated with the object of eliminating physical fatigue.

#### **Method of Manufacture**

The ingots are cut or broken from an octagonal or duodecagonal cross-sectioned ingot of width from 12½ in. to 18 in. across flats. The weight is calculated from the finished wheel weight with appropriate allowances for losses during manufacture.

The ingots from the breaking shop are taken by a gravity roller conveyor to a furnace charger in the main forge building. The charger picks them up individually and places them in radial rows on the hearth of the rotary furnace. The ingots pass successively through the pre-heating, heating and soaking zones in the furnace and are then taken individually by a furnace discharging machine to a transfer car, which transfers the ingot through a hydraulic descaling machine to the 8,500-ton hydraulic press.

After slabbing down between flattening tools, the bloom is transferred to forging tools mounted on sliding tables on the bed. Under increased pressure the slab is forged to finish the hub, partly form the bore, and prepare a rim section suitable for rolling. The complete forging is transferred from the dies to a live roller table by an unloading mechanism and conveyed to a 1,000-ton capacity punching press of the upstroking type, equipped with hub clamping dies. The punched wheel then passes on the roller table through a tunnel beneath the main control room and is loaded into the rolling mill.

The rim section is then reduced in

volume and rolled to the required contours with an accompanying increase of wheel diameter. An unloading mechanism takes the rolled wheel from the mill and, by means of a transfer car, the almost completed wheel is carried to the 2,000-ton capacity dishing press. After dishing, the wheel is stamped with identification numbers and transferred either to a five-station rim chilling machine or direct to a cooling bed.

#### **The Charging Machine**

The furnace charging machine consists of a cable-driven carriage mounted on a fixed but adjustable bridge. The peel hoisting mechanism and oil hydraulic equipment for the gripping motion are mounted on the carriage. The peel structure is pivoted at the rear and fitted with forging manipulator sheaves at the furnace end. Mounted on the structure is the peel proper, equipped with special tongs designed to ensure accurate spacing of the ingots on the hearth and to permit a straight withdrawal.

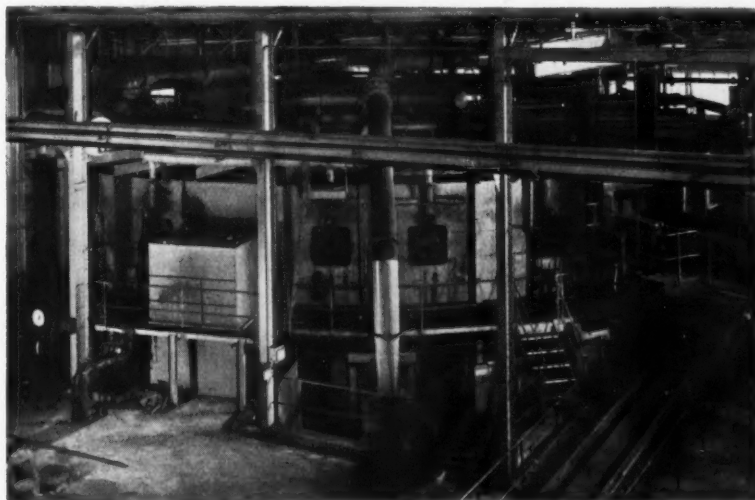
The machine is arranged automatically to complete a cycle of operations initiated by the operator in the control room after he has indexed the rotary hearth of the furnace. With the tong head resting on a centring cam and the ingot lying on the roller conveyor against the conveyor and the stop, the cycle commences with the lifting of the furnace charging door. The tongs grip the ingot at a fixed distance from its base. The peel structure is lifted and the tongs rotate 90 deg. to bring the axis of the ingot into the vertical position, and its base to a fixed distance above the furnace hearth.

The carriage moves to the extreme forward position to bring the first ingot to the innermost position on the furnace hearth. Completion of forward travel actuates the lowering of the ingot to the hearth, which, in turn, release the grips. At the end of the release stroke the carriage moves back to its original position.

The cycle is thereupon repeated and a second ingot is charged. Forward travel of the carriage is sequence controlled from a multiple-cam limit switch of the vernier setting type. After the seventh or outside ingot has been charged the furnace door is closed and the peel and tong head cooling sprays are brought into action.

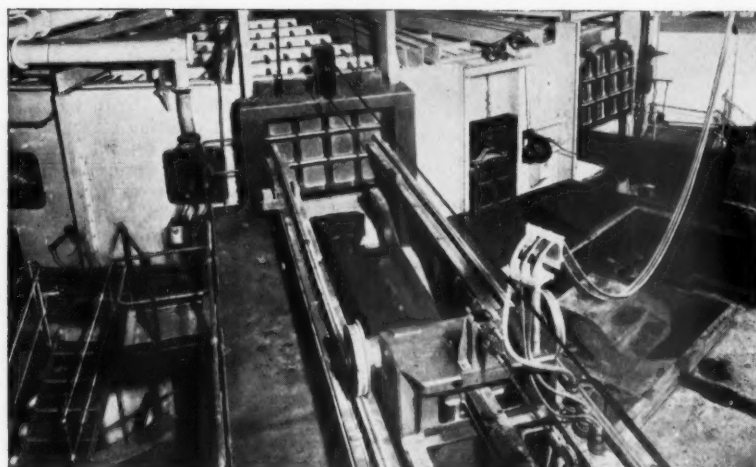
#### **The Furnace**

The furnace, built by the Salem Engineering Co. Ltd., is said to be the largest of its kind in the country, and has a rated heating capacity of 40 tons of steel an hour at a maximum temperature of 1,280 deg. C. The diameter over the outer buckstays is 69 ft. The hearth is 15 ft. wide with a mean diameter of 48 ft. 3 in. Charging and discharging doors are set at an angle of 30 deg. There are two suspended baffle walls between the doors, built radially across the furnace. Small doors in the inner and outer walls between the baffle walls



*The Salem 69 ft. diameter rotary hearth furnace*





*The furnace discharging machine*

facilitate cleaning of the hearth while the furnace is in operation.

The furnace has four firing zones and is fitted with 39 steam atomising burners designed for heavy fuel oil burning. Pre-heated air for combustion is obtained by utilising part of the heat contained in the waste gases; two Newton Chambers needle-type metallic recuperators are used as heat exchangers. Pre-heated air is used in the heating zones and atmospheric cold air in the pre-heating and soaking zones. The hearth, of the Salem floating type, is driven at diametrically opposed points by a 27-h.p. motor coupled through a differential gear and line shafting. There is a 200/1 reduction worm gear driven by vee-ropes at each end of the shafting. A pinion on the worm gear output extension shaft engages a rack under the rotary hearth structure.

The hearth is carried on 108 wheels fitted with taper roller bearings running on circular rails. Fifty-three rows of ingots are arranged in the 330 deg. be-

tween the charging and discharging doors giving a maximum of 371 ingots in the furnace at any one time. The ingots pass through the heating and soaking zones by progressive indexing of the hearth at a rate corresponding to the output of the plant. At a production rate of 60 ingots per hour the heating time is approximately  $6\frac{1}{2}$  hours. The furnace is equipped with Honeywell Brown Electronik temperature controllers and Electroflo fuel/air ratio controls on each zone and with Electroflo automatic furnace pressure control operating on the recuperator dampers.

#### **Furnace Discharging Machine**

The ingots are removed from the furnace by a bridge-type discharging machine of 1-ton capacity. The machine is basically similar to the charging machine. The hoisting of the peel, intended merely to clear the hearth, is effected by eccentrics mounted on extension shafts of a worm reduction gear coupled to a 27-h.p. d.c. motor. The

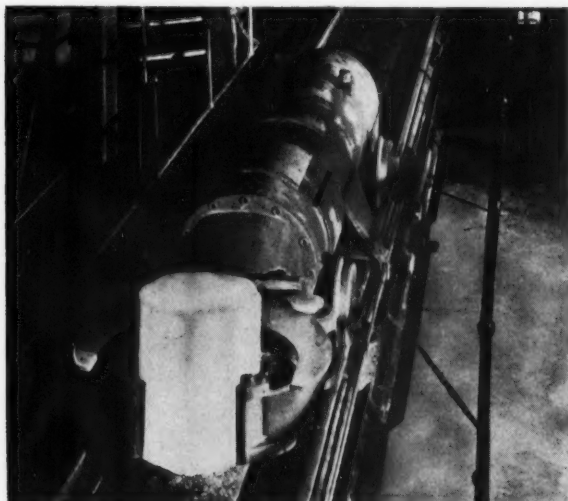
grips are operated by a Vickers-Detroit combination pump. The grip cylinder is controlled by a solenoid pilot-operated 4-way valve. Travel of the carriage to the pre-determined billet position is controlled by a multiple cam limit switch with vernier setting adjustment and "slow down" and "stop" rings for each position.

The grips at the withdrawn position are aligned over an air-operated elevator ram having a stroke of 30 in., and which is interlocked with the carriage to prevent the release of the ingot when the elevator is not at the top of its stroke while permitting the operator to commence the discharging cycle before the elevator is raised.

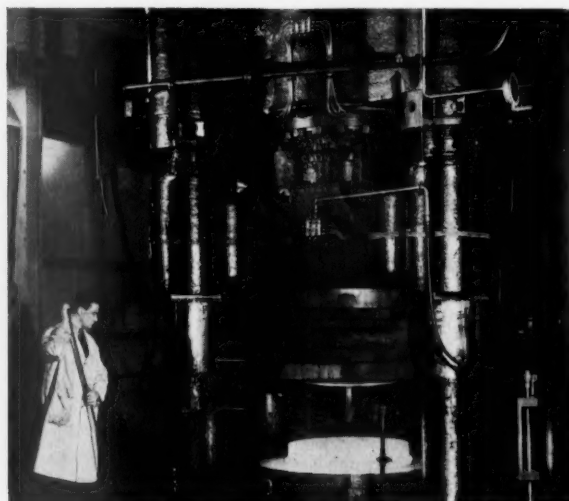
Completion of travel to the outermost ingot initiates gripping, followed by hoisting of the peel, withdrawal to the elevator, and a lowering of the peel. If the elevator is raised the release of the grips and subsequent lowering of the elevator take place automatically, together with a closing of the furnace door. The operator then initiates transfer of the ingot to the descaler.

Signal lamps on the control desk show the operator the ingots remaining to be charged and discharged. The hearth is not indexed until a clear space is indicated. Complete sequence controls on each machine automatically reset for the next cycle of operations. A rotating dial outside the control room is geared to the hearth and indicates progress of ingots through the furnace and operation of the hearth indexing limit switches.

The transfer car body is of fabricated construction, mounted on flanged wheels, and travels on flat-bottom rails 67 ft. long, one end being built into the hydraulic descaler. A bank of live rails supplies current to the car controls. An electrical contact switch at the furnace end of the track is automatically operated by the car and controls the supply of cooling water to the peel of the discharging machine. Track switches at the press end of the track slow down



*The ingot transfer car*



*The 8,500-ton hydraulic press*

the car before entering the descaler. Similar switches are used at the furnace end to control its return to the furnace and other interlocking duties. Release of the ingot, followed by the automatic return of the car to the furnace, is controlled by the press operator.

#### Hydraulic Descaling

The hydraulic descaling machine has 12 Harland-Aldrich No. 2 nozzles, each of 27.2 gal. per min. capacity, six being mounted in header pipes above and below the ingot; the top header is adjustable. The operating gear is mounted in a box type fabrication on top of which is fitted the upper nozzle adjusting gear and a Schneible Multiwash collector with an extractor fan which prevents the steam generated from obscuring the view of the operator. Waste water drains into the main sump and scale is deposited into a bin below floor level.

Water is drawn from the main cooling water pumps by a Berry three-throw pump delivering 34 gal. per min. into a weight-loaded accumulator of 47.7 gal. capacity. Nozzle supply is controlled by a Hunt air-operated valve. Descaling is fully automatic, the transfer car turning the water on and off on its travel to the forging press. The water is supplied at a pressure of 1,500 p.s.i.

#### Forging Press

The ingot is slabbed down on the forging press between flat dies to the required thickness and transferred to the lower forging die. The sliding table is moved to bring the top forging die under the centre line of the press. The second forging operation is completed under intensified pressure during which process the next ingot to be forged is placed on the slabbing die. The lower sliding table is moved back to bring the completed forging over the stripping ram and the next ingot under the press crosshead.

At 5,600 lb. per sq. in. intensified pressure the maximum load on the press is 8,500 tons. This load can be reduced on smaller forgings by reducing the pressure in the air-loaded accumulators. The press is fitted with four cylinders, having a diameter of 33½ in. and a stroke of 36 in. The daylight between the sliding tables is 5 ft. 7 in. The top and bottom tables have travels of 5 ft. and 9 ft. 6 in. respectively. The crosshead is a one-piece steel casting and transmits the load from the four rams located between the columns. Built into the crosshead are twin hydraulic cylinders for moving the top sliding table.

Top die cooling water sprays are automatically operated by valves actuated by the table movement. Cooling of the lower dies is by spray rings, hinged to facilitate die changing. Control is by means of air valves, foot-operated at the press control desk. The crosshead bushes and all main glands are fed with grease from a Trabon automatic system. The hydraulic intensifier, which has a ratio of 2.87/1, gives a pressing stroke of 6 in. The press is equipped with a

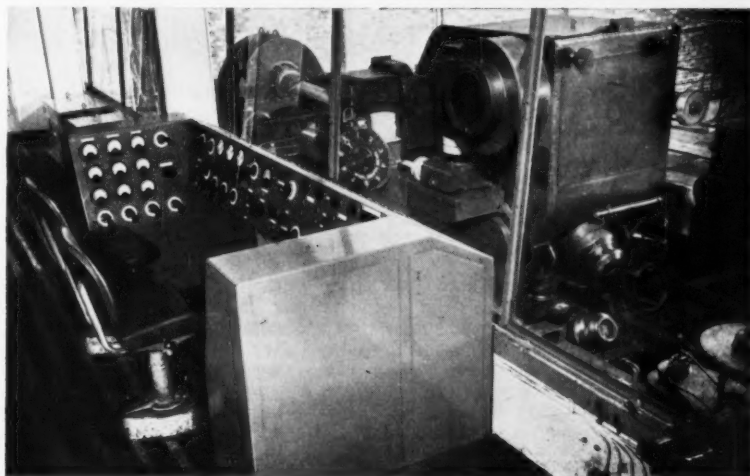
pre-fill tank and surge tank. All the main hydraulic valves are arranged in the press foundation between the press and the control room. A pressure switch prevents operation of the intensifier before full accumulator pressure has been developed in the main cylinders.

The control gear is electro-hydraulic using V.S.G. auto-controlled pump and solenoid-operated pilot valves to direct oil to servo cylinders mounted under the main valve spindles; all press controls are grouped on a desk and are under the control of one operator.

From the press the forging passes on to a live roller table which runs through the punching press on to the rolling mill. The press unloader is controlled by oil-hydraulic and operated from a common control desk by the punching press driver. The roller table consists of four units each operated by separate motor, and serves as receiving and despatch

double pump for the grip mechanism and a separate pump for operating the rotating and travelling cylinders; the latter are mounted in the movable carriage and fed by flexible hose.

Special attention has been given to the design of the Taylor-Kendall rolling mill to provide ease of handling and control. Indicating equipment is built into the mill to show the inside diameter of the rim and mill setting scales are provided for rapid setting-up to suit varying rim width and roll diameters. The forged section is formed to the required shape by a series of electrically driven edging rolls and pressure rolls. The driven main roll is mounted in an adjustable carriage, and two guide rolls are mounted on a separate carriage which slides on the same ways as the main carriage, and so arranged that they can be retracted to facilitate loading and unloading of the mill.



*The wheel rolling mill from the control room*

tables. Table No. 4 is slowed down and stopped by photo-cell equipment at the mill end, and is restarted automatically by operation of the mill loading mechanism.

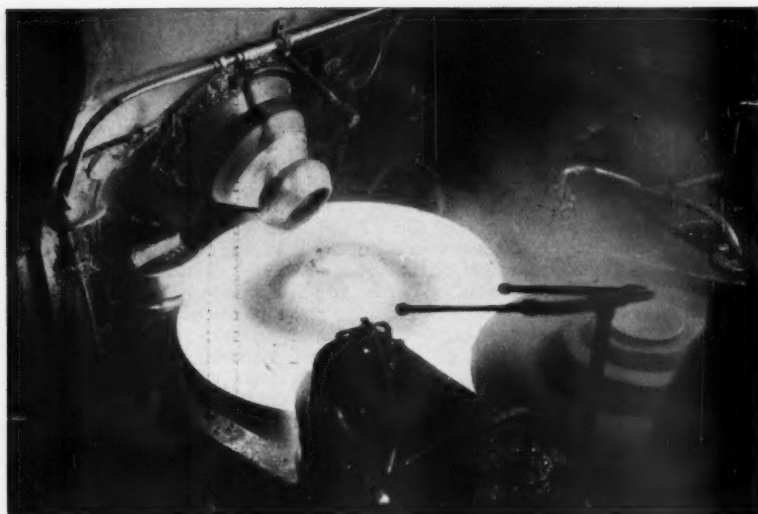
#### Punching Press

The punching press of the up-stroke type has a capacity of 1,000 tons and a stroke of 9½ in. at a speed of 3 in. per sec. A 100-ton capacity clamping cylinder is mounted in the press crown, and jack cylinders give an approach speed of 6 in. per sec. The crosshead is stopped by limit switch, and the control gear is similar to that used on the 8,000-ton press.

To facilitate alignment of the loading machine in relation to the rolling mill, the loading mechanism main supporting frame is pivoted at the mill end, and suspended at the other from a curved track. A simple carriage, activated by a hydraulic cylinder, carries the self-centring grip mechanism which rotates to enable the grips to clear the forging. A separate oil-hydraulic unit in the motor room has a Vickers-Detroit

Pressures are remotely controlled at the mill desk by the adjustment of venting valves coupled to Vickers-Detroit hydrocushion relief valves. All driven roll speeds are independently variable and the overall mill speed is also adjustable to maintain pre-set roll speed ratios modified to suit roll diameters. Controls give instantaneous edging, producing a parallel wheel hub, or a continuous edging to produce a tapered web by the use of an electronic ratio controller, coupled to the wheel growth dial. British Timken roller-bearings are fitted to the various shafts and lubrication to a primary gearbox, quills and main roll gearbox is provided by a De Laval circulating unit manufactured by Denco Engineering Services Limited, and installed in the motor room basement.

This unit is fitted with duplicated gear-type pumps, motor driven filter and so on; automatic control equipment brings this pump into operation in the event of loss of pressure. Audible warning is provided for excessive pressure and controls are interlocked with the



*The wheel rolling operation*

lubrication system. The roll carriages are provided with Trabon automatic lubrication.

On completion of the rolling operation the wheel is transferred to the dishing press, which operation changes the web of the wheel from a flat disc to a cone shape and sets the boss offsets. The transfer car is cable driven and the unloading mechanism is similar to that used for loading the mill. A swinging arm is brought into position by the press operator who then returns the car to the mill end of its track. The press has a rated capacity of 2,000 tons at an accumulator pressure of 2,200 p.s.i., intensified to 6,000 tons p.s.i. on a single ram 31½ in. diameter and 2 ft. 7 in. stroke. Press control is similar to that used on the 8,500-ton press except that only a pre-fill tank is provided.

The rim chilling machine consists of five chilling stations mounted on an electrically driven turntable 14 ft. diameter. At each station is placed a set of three tapered rolls, one being driven by an electric motor mounted inside the turntable hood. Box section spray rings are mounted on the roll housings and coupled to a pump inside the turntable hood through a solenoid operated valve. The pump rotates with the table structure and draws water from an annular tank located around the vertical post which carries the weight of the machine. At each station is a set of loading forks under which is mounted a live roller centre.

A fixed cam is arranged to lift the forks above the level of the live rollers which receive the wheel from the jib crane. After the wheel has been deposited on the forks the main turntable is indexed 1/5th of a revolution lowering the forks and leaving the wheel on the rotating rollers. The water spray valve of that station is automatically switched on together with the spray timing device which holds the spray valve open irrespective of further movement of

the station. As the first station is carried away from the loading point the fifth station goes into the loading position and the wheel is lifted from the live rolls by forks for transference by a hydraulic jib crane to the final laydown position. The underside of the hood is ventilated by means of a fan which is mounted on the centre of the main hood structure.

Collector rings mounted on the vertical centre column supplies current to five roll motors, the spray pump and the spray valves. The timers are located in the main control room on the chiller control desk. The latter also carries the turntable rotation controller and the hydraulic jib crane controls. The final laydown station consists of a simple turntable carrying three stacking pegs.

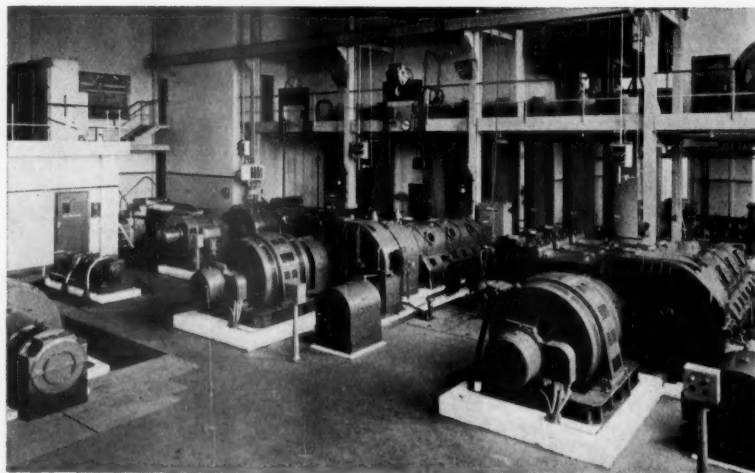
#### Motor Room Equipment

The main pumps and accumulators for the press hydraulics are designed to operate up to a maximum working pressure of 2,200 p.s.i. and arranged to

form two independent systems with separate control gear. The large system comprises five 68 cu. ft. capacity strip wound air vessels and one 68 cu. ft. capacity strip wound water vessel. The small system comprises two 68 cu. ft. strip wound air vessels and one 25 cu. ft. solid forged water vessel. The ratio of air to water volume is such that a pressure drop of 10 per cent is allowed over normal operating levels. A 3-stage Hamworthy air compressor of 18 cu. ft. per min. capacity and 14½ h.p. is used for charging the air vessels. The water and air vessels are connected to mercury level control pots of Vickers-Armstrongs design for control of the pumps and accumulator auto stop valves.

The pumps are unloaded by lifting the suction valves at pre-determined water level. Contacts in the mercury pots shut down the pumps at extra high level to avoid overfilling. Should the pumps fail to meet demands on the systems further contacts are arranged which close the accumulator auto stop valves thus isolating the water vessels from the press supply lines. The large accumulator system is fed by two three-throw Vickers-Armstrongs pumps of Elswick design each having a capacity of 400 g.p.m. at 2,200 p.s.i. Each pump is driven through single reduction double helical gears by a Metropolitan-Vickers 6,600 V. slip ring motor of 750 b.h.p. at 740 r.p.m.

The small accumulator system is fed by a Davy three-throw pump of 160 g.p.m. capacity at 2,200 p.s.i. It is possible by means of the independent accumulator systems to operate the 8,500-ton press at lower pressures than the punching and dishing presses and thus to consume less power in the forging of smaller products. The accumulators can be connected together to operate as a combined system by equalising the air pressures and opening a stop valve in the water lines. The pumps and accumulators are housed in the motor room and the valves are arranged under the vessels in a basement



*The motor room showing part of the installation*



which extends into the main pipe subways and the press foundations.

New 2 ft. dia. supply and return culverts have been constructed between the motor room and the Bridgewater Canal which forms the S.W. boundary of the works and two Gwynnes centrifugal pumps each of 1,000 g.p.m. capacity are coupled through Auto-Klean strainers to supply cooling water for rolls, dies and chilling machine, etc. All waste water is returned to a scale sump through open troughs constructed in the plant foundations. The scale is collected in special containers which are lifted out of the main return sump and allowed to drain before being emptied into rail wagons. The return water is lifted from the deep sump to an oil separator chamber by two float controlled Gwynnes vertical

spindle pumps and then returns by gravity to the canal.

An Ingersoll Rand 90 h.p. 3-cylinder air cooled compressor equipped with an after-cooler and air receiver supplies compressed air to the forge for operation of the elevator at the furnace discharger. Compressed air is used for operation of the cooling water valves and the stamper traverse cylinder and is also piped to convenient points for general service. The motor room is supplied with clean air through a Visco filter at 30,000 cu. ft./min. by a fan designed to maintain a positive pressure in the room. The outlet from the fan is connected to the main cable subways and the air is allowed to escape into the main pipe trenches and the plant foundations.

The main 6,600 V. switchgear, the

400 V. switchboard and the rolling mill control board are mounted on a balcony over the oil hydraulic room. This latter is at motor room floor level but is enclosed from the main room and houses the tank units carrying the Vickers-Detroit equipment and the oil supply tank for the V.S.G. systems.

In the basement beneath the oil hydraulic room is housed the mill lubrication equipment, the mill and press greasing equipment and the V.S.G. oil hydraulic pumps. The lubricating system is adjustable to suit conditions.

Particular care has been taken in preparing the general layout to give ease of access to the extensive pipe and cable runs with the object of facilitating inspection during the operation and of simplifying maintenance work.

## Development of Light Shunting Unit

### *Machine for propelling railway wagons in sidings*

VARIOUS developments have taken place in the lightweight shunting unit of Belgian design which was illustrated in our August 15, 1947, issue in the course of a demonstration at the Westbourne Park depot of the Western Region. The unit, known as the Locopulsor shunting machine, is now manufactured in Great Britain by E. G. Steele & Co. Ltd., and consists of a tubular chassis on which is mounted a 600 c.c. J.A.P. petrol engine, coupled through a speed-reducing device to a single driving wheel which runs on the rails. An operator walking behind the machine guides it by means of handlebars. The driving wheel is fitted with a high-pressure pneumatic tyre, grooved and corrugated to improve adhesion. The chassis has been entirely redesigned to take the more powerful engine; previously the unit was powered by a 500 c.c. engine of Belgian design.

Heavier loads can now be shunted with this machine, and on a level track in good condition over 100 tons can be handled with ease, with correspondingly smaller tonnages on gradients. Running costs are very low, as the petrol consumption is only  $\frac{1}{4}$  to  $\frac{1}{2}$  gal. per hour. There is no separate oil tank or pump in the redesigned machine.

Over 1,000 of these machines are already in use on the Continent, and several are at work in this country at power stations, steelworks, and railway depots. Features of the design include a 4-speed gearbox with pre-selective

gear changing, epicyclic speed-reduction gearing, and a safety device to prevent the machine from being carried away at the end of the shunt when the wagons have acquired speed. As the machine runs on the rails it is not necessary for the ground to be paved level with the track and the Locopulsor can be used

anywhere throughout the sidings area. Experience with the Locopulsor in industrial sidings has shown that it can be employed usefully either instead of a locomotive on the smaller premises, or as an extra facility for specific duties at large works where several locomotives may be at work on heavier shunting.



*Propelling wagons with the Locopulsor shunting machine running on the rail*

BRITISH RAILWAYS EXPERIMENT WITH PNEUMATIC BUFFER.—British Railways are to fit 250 13-ton wagons experimentally with a new type of oil-pneumatic buffer which is expected to reduce the "shock"

to less than a quarter of that sustained with the normal spring buffer. The new buffer is based on experience with aircraft landing gear and relies on the compression of air by oil to cushion the impact.

In addition to minimising shock it has the advantage of reducing the weight of each wagon by about 750 lb. Wagons fitted with the new buffers are expected to be in service by April.

## New Locomotives for Iraq

*Metre-gauge 2-8-4 tank engines arranged for oil burning for the Iraq Petroleum Co. Ltd.*

**A**MONG the orders recently completed by Hudswell, Clarke & Co. Ltd. are three, 2-8-4 tank engines for operating on the privately owned lines of the Iraq Petroleum Co. Ltd. The locomotives are of a new design and were constructed to the requirements and inspection of the Crown Agents for the Colonies. Arranged for oil burning, the oil fuel apparatus is of the Mexican trough type, which is standard on the Iraqi State Railways.

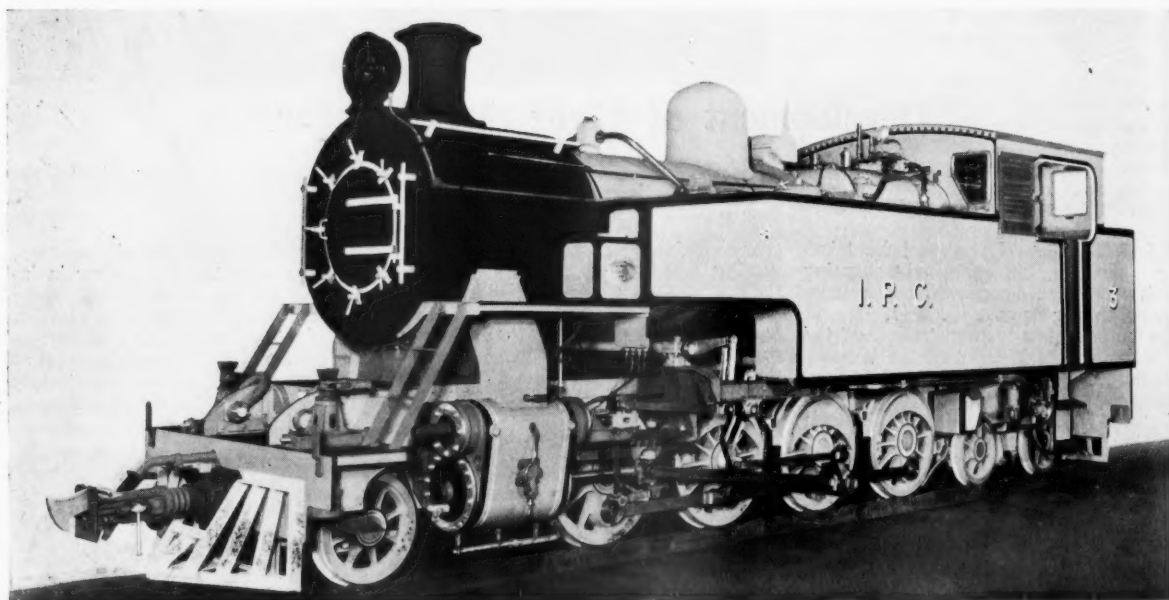
The boiler, which is of the saturated type, is provided with a Belpaire firebox with an inner firebox of steel. Flannery type flexible water space stays are fitted in the breaking zones. The first two rows of roof stays are also of Flannery type.

Boiler washout and inspection doors are in accordance with Iraqi State Railways standard design. An Everlasting type blow-off cock is fitted at the front end of the firebox. Water

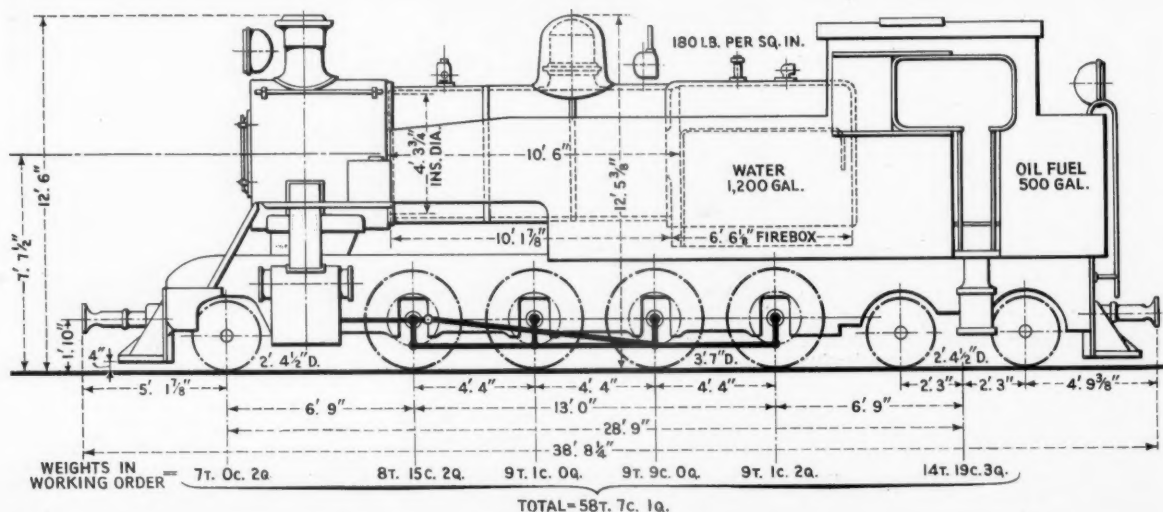
supply is by means of two Davies & Metcalfe, Nathan hot water injectors, through a Davies & Metcalfe Duplex top feed clackbox 2 in. dia. fitted near the front end of the boiler. Other fittings include two Ross pop safety valves. The boilers are lagged with Limpet asbestos mattresses.

The engine frames are of the plate type, 1 in. thick, suitably stayed by means of horizontal and vertical

(Continued on page 637)



*Metre-gauge 2-8-4 tank engine for Iraq Petroleum Co. Ltd. arranged for oil burning*



*Diagram showing principal weights and dimensions of the locomotive*

## RAILWAY NEWS SECTION

## PERSONAL

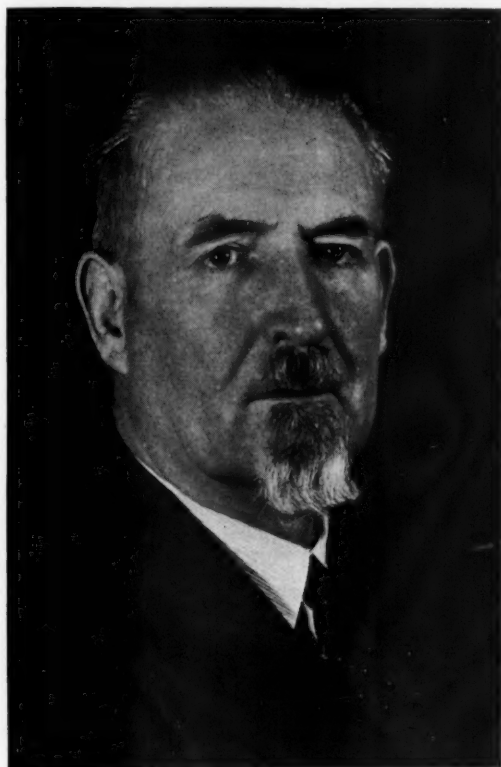
The Rt. Hon. Alan T. Lennox-Boyd, M.P., Minister of Transport, has accepted the Presidency of the Transportation Club.

Mr. Robert Flack has been appointed Member of the Transport Tribunal for Northern Ireland until December 31, 1953, in place of Mr. Malcolm P. Sinclair, who died recently.

He passed the Associate Examination of the Institute of Transport in 1931 and later was made member. In 1941 he became Chief Traffic Manager. In October, 1945, he became Deputy General Manager and in 1950 General Manager.

We regret to record the death in London, on November 27, of Mr. Frank Gurney, M.I.E.E., Assistant Manager, Home Sales, Metropolitan-Vickers Electrical Co. Ltd.

Staff Manager in February, 1949. In February, 1950, he was appointed Deputy General Manager. During 1929/30 Mr. du Plessis served as a member of the secretariat of a commission appointed by the Government to enquire into the question of road motor competition with the Railways. The findings and recommendations of this commission formed the basis of the legislation passed by Parliament in 1930 under which machinery was set up



*Mr. W. H. L. Heckroodt*  
General Manager, South African Railways  
& Harbours, 1950-52



*Mr. D. H. C. du Plessis*  
Appointed General Manager, South African  
Railways & Harbours

Mr. W. H. L. Heckroodt, M.Inst.T., who is retiring on December 17 as General Manager of the South African Railways & Harbours, was born in the Orange Free State on December 17, 1892. He joined the service in 1908 in the Transportation Department, and served in turn at Springfontein, Viljoens Drift, Dewetsdorp, Kroonstad, Brandfort, Bloemfontein, Parys, Heilbron, Paardeberg and Durban, steadily advancing in rank through the clerical and stationmaster's grades until he was appointed Welfare Officer on the Orange Free State system in 1927. In 1928 he was transferred to the office of the Railway Board at Pretoria, and was appointed Private Secretary to the Minister of Railways, and the Railway Board in 1932, which position he vacated in 1934 on his appointment as Staff Controller in the General Manager's office; he later became Superintendent (Staff). In 1936 he became System Manager, Pretoria, and three years later he was appointed understudy to the Chief Accountant. In January, 1940, Mr. Heckroodt became Chief Accountant.

Mr. D. H. C. du Plessis who is appointed General Manager, South African Railways & Harbours, with effect from December 17, 1952, was born on March 12, 1898, and entered the railway service as a clerk at Johannesburg on June 10, 1915. He served successively in the then Assistant General Manager's and General Manager's staff offices until 1931, when he was appointed to the post of Supervisor, Transport Commission, Johannesburg, in which position he formed a liaison between the South African Railways and the Central Road Transportation Board. In 1934 he became Secretary to the Railway Board, and served the Minister of Railways & Harbours and the Railway Board in that capacity until 1937, when he returned to Johannesburg as Superintendent (Parliamentary). In 1939 he was appointed System Manager, Bloemfontein, and four years later was promoted System Manager, Johannesburg. In October, 1945, he was made Chief Harbour, Shipping and Development Manager, and he became Chief

for the control and co-ordination of all forms of transport in South Africa. With few minor alterations this machinery is still in existence. In 1934 Mr. du Plessis was secretary to the international commission which, under the Chairmanship of Sir Guy Granet, investigated the working of the South African Railways. After the commission had completed its investigations in South Africa, Mr. du Plessis proceeded to London for the compilation of the commission's report and before returning to South Africa undertook a tour in Great Britain and Germany for the purpose of studying various aspects of railway working in those countries. In 1947 he was appointed a member of a Royal Commission to report on railway operation in Western Australia, the Australian member of the commission being Mr. Alexander J. Gibson. In 1946 Mr. du Plessis led the S.A.R. mission, representative of all the main departments, which visited the United Kingdom, Sweden, Switzerland, Holland, Belgium, Canada, the U.S.A.,





*Elliott* [ & Fry  
The late Brig.-Gen. F. D. Hammond,  
C.B.E., D.S.O., 1881-1952  
Advisor to many overseas railways



Mr. M. R. Haddock  
Appointed Assistant General Manager & Assistant  
Secretary, National Dock Labour Board



The late A. H. Coleman  
Buenos Ayres Great Southern Railway,  
1887-1949

Argentina and Brazil for the purpose of undertaking a detailed study of the latest trends in transport developments in the countries visited with a view to the adoption of the best and most modern methods in the large-scale improvements envisaged by the Railway Administration. Mr. du Plessis has served on numerous *ad hoc* departmental committees. He is at present Chairman of the Railway Conciliation Board and the Superannuation Fund Joint Committee of Management, two statutory bodies representative of the Administration and all sections of the European railway personnel. He is also Deputy Chairman of the Central Sick Fund Board and is Chairman of the Executive Committee of that Board.

We regret to record the death at Gibraltar, at the age of 71, of Brigadier-General F. D. Hammond, C.B.E., D.S.O., whose special reports on overseas railways are widely known. General Hammond served in the South African War in 1901-02, and received the Queen's Medal with five clasps. At the outbreak of the European War in August, 1914, he became Deputy Assistant Director of Railway Transport, and in June, 1915, Assistant Director. In November, 1916, he was appointed Director of Railways of the British Salonica Force, and in April, 1918, became Assistant Inspector General of Transportation, retaining this office until the following April. He was commissioned Brevet Lt.-Colonel, Royal Engineers, and was mentioned in despatches seven times. Early in 1919 he was chosen as Head of the Allied Railway Commission to Poland, remaining there until January, 1920, when he was appointed Director of Communications in Upper Silesia. Thereafter he was sent on a series of special missions to inspect and report on railway and transport systems in various colonies. He was Special Commissioner for Railways in the East African Dependencies in 1921, inspected and reported on the Gold Coast Railways, on the Sierra Leone Railways in 1922, on the Nigerian Railways in 1924, the railways in Iraq in 1926-27, and also studied the transport problems of Jamaica. In 1926 he was commissioned by the Government of Southern Rhodesia to in-

vestigate the finance and administration of the Rhodesian Railways system. In 1931 he was a member of the Overseas Mechanical Transport Directing Committee. He was also on the boards of the Rhodesia Railways Limited and of the Mashonaland, Trans-Zambesia and Beira Railway Companies. In 1935 General Hammond accepted the invitation of the Chinese Government to examine and advise on the organisation of the Chinese railway system. In 1937 he was appointed to the board of the Central Uruguay Railway Co. of Monte Video Ltd. and in 1939 he was elected Chairman of that company and also Chairman of the North Western of Uruguay Railway Co. Ltd. He retained the chairmanships of these companies until the sale of the railways to the Uruguayan Government took place in 1949.

Mr. Harry Cresswell Steeples, A.M.I.C.E., Senior Squad Leader, Civil Engineer's Office, Euston, London Midland Region, has been appointed Assistant (Bridges), Civil Engineer's Office, York, North Eastern Region.

Mr. M. R. Haddock, Assistant Secretary, Docks & Inland Waterways Executive, who, as recorded in our October 24 issue, has been appointed Assistant General Manager & Assistant Secretary, National Dock Labour Board, joined the London & North Eastern Railway in 1931 as a Traffic Apprentice, and from 1936 to 1939 was Assistant Dock Superintendent and Dock Agent at Tyne Dock and Hull respectively. At the outbreak of war he went overseas with the No. 1 Docks Group and subsequently commanded No. 10 Port Operating Group. He was the Dock Superintendent in charge of the "Mulberry" Harbour, Port Superintendent of Antwerp from 1944 to 1945 and Port Controller of Hamburg from 1945 to 1948, finishing the war with the rank of Colonel. In 1945 he was created an O.B.E. and made an Officer of the Order of Leopold. He joined the Docks & Inland Waterways Executive as an Assistant Secretary in November, 1948. Mr. Haddock at present holds the rank of Lt.-Colonel in the Royal Engineers (Supplementary Reserve) in which he commands No. 81 Port Regiment.

Mr. A. H. Coleman, whose death we recorded briefly in our November 28 issue, served on the Buenos Ayres Great Southern Railway for an unbroken period of 62 years, a world's record for a Railway Officer. He was born in 1869 at Bridgend, Glamorgan, the son of Mr. Peter Coleman, Station-master on the old G.W.R. at Brynmynym. He entered the service of the G.W.R. in January, 1883, as a junior clerk, at Pontycymmer, later transferring to Nantymoel as a senior clerk, where he remained until he joined the Buenos Ayres Great Southern Railway. In 1887, he left England for the Argentine, where he filled various posts until his appointment as Sectional Traffic Superintendent of the Buenos Aires Division towards the end of the last century. He was appointed to Bahia Blanca as Divisional Traffic Superintendent in 1905, and subsequently became the General Manager's representative in the City for the Southern Region of the B.A.G.S., later taking over the Bahia Blanca & North Western Railway. His duties at Bahia Blanca included the control of the Ports of Ingeniero White and Puerto Belgrano. He was also at one time President of the Bahia Blanca Water Works, Gas Works, Tramways, and Produce Market. He was actively employed in these duties until January, 1949. Mr. Coleman possessed a colourful personality, which led to his being known in Argentina as "Don Arturo" and also as the "uncrowned King of Bahia Blanca."

We regret to record the death in Buenos Aires of Mr. W. E. Saxby, formerly District Stores Superintendent, Central Argentine Railway.

Mr. Brian Hutton Dulanty and Mr. Ian McLaren Gillett have been appointed to the board of Silentsloc Limited. Mr. Gillett, who was previously General Manager of the company, has also been appointed Managing Director.

British Railways, North Eastern Region, announces the appointment of Mr. J. A. R. Horsley, Assistant District Goods Superintendent, Paddington, Western Region, to Head of Freight Development Section, Commercial Superintendent's Office, York.

With the approval of the British Transport Commission, the Railway Executive has agreed to release Lt.-Colonel H. B. Everard, Chief Officer Engineering (Maintenance), Railway Executive, to take up the appointment of General Manager, Rhodesia Railways, with effect from January 16, 1953. Lt.-Colonel Everard will succeed as General Manager Sir Arthur Griffin, who, it is announced by the Rhodesia Railways Higher Authority, is to become Chairman of the Rhodesia Railways Board.

Engineer Juan Gatto, President of the Purchasing Commission of the Argentine Ministry of Transport in London, has returned to Buenos Aires on a brief visit for the purpose of consultation.

Mr. Alfonso Pena Boeuf has been nominated President of the Spanish National Railways, in succession to the Count of Guadalhorce.

Mr. A. S. C. Chattey has been appointed Managing Director of A.C.V. Sales Limited. Mr. Chattey was formerly Director-Home Sales of the Company.

Mr. S. E. Lord, M.I.Mech.E., M.I.Loco.E., has joined the Engineering Department of the Crown Agents. Mr. Lord was apprenticed at Ashford Works, British Railways, under Mr. R. E. L. Maunsell, and gained further experience with Beyer, Peacock & Co. Ltd. In 1924 he joined Messrs. Rendel, Palmer & Tritton, eventually taking charge of the locomotive section, in which capacity he left in October of this year to join the Crown Agents. From 1944 to 1946 and again in 1948 Mr. Lord was seconded to Washington as Technical Adviser to the India Supply Mission.

#### FUNERAL OF MAJOR M. J. M. DEWAR

A Requiem Mass for Major M. J. M. Dewar, O.B.E., Public Relations and Publicity Officer, British Railways, Western Region, who died on November 23, was conducted by the Rev. Richard Berry on Friday, November 28, at the Assumption Convent Chapel, Kensington Square. In addition to family mourners, those present included:—

*British Transport Commission:* Messrs. C. Barman, L. A. Carter (representing Commercial Advertisement Division), C. E. R. Sherrington.

*Railway Executive:* Messrs. A. J. Pearson (also representing Mr. John Elliot), L. W. Conibear (representing Mr. David Blee), J. O'Neill, D. S. M. Barrie, G. Wynne Davies.

*Road Haulage Executive:* Mr. G. E. Orton.

*Western Region:* Messrs. K. W. C. Grand, Gilbert Matthews, R. Burgoyne, F. Grundy (representing Mr. C. Furber), H. G. Bowles, R. G. Henbest, G. S. Halliday, Dr. C. T. Newnham, Messrs. H. H. Swift, H. E. Hedges, C. W. Powell, R. F. Hurford, J. H. Wells, Cyril J. Rider, G. Dyall.

*Eastern Region:* Messrs. A. J. White (representing Mr. C. K. Bird), J. W. Dunger (representing Mr. C. Dandridge), M. B. Thomas.

*London Midland Region:* Mr. George Dow.

*Southern Region:* Mr. F. D. Y. Faulkner.

*North Eastern Region:* Mr. S. W. Jesper.

*Scottish Region:* Mr. H. M. Hunter.

Also among those present were: Messrs. H. Berkeley Hollyer (representing Mayor and Corporation of Torquay), E. Turner (representing Mayor and Corporation of Weston-super-Mare), H. A. G. Worth, Griffiths & Millington, Major Sir Leslie Joseph, Mr. W. B. Harbud (representing Northcliffe Newspapers).

The funeral took place at Kensal Green Cemetery.

We regret to record the death at Beecroft, New South Wales, on November 19, of Mr. C. B. Byles, formerly Signal Engineer, New South Wales Government Railways, and, from 1901 to 1911, Signal Engineer of the Lancashire & Yorkshire Railway.

We regret to record the death at Hereford, on November 25, at the age of 78, of Mr. E. H. Morris, M.I.C.E., formerly District Engineer, Manchester, L.M.S.R. Mr. Morris was articled as pupil to Mr. W. Hunt, Chief Engineer, Lancashire & Yorkshire Railway in 1891, and in 1903 was appointed Resident Engineer at Formby. In the same year he joined the staff of Messrs. Gates & Hogg, Railway Contractors, rejoining the L. & Y.R. engineers staff in 1912. During the 1914-18 war he served as Captain in the Royal Engineers, Railway Troops. In 1919 he held the position of Resident Engineer at Fleetwood, and from 1929 to 1937, when he retired, he was District Engineer at Manchester, during which period he supervised the structural alterations in connection with the Manchester South Junction & Altrincham Railway electrification.

## Transportation Club

### Minister of Transport entertained

On Monday last the Rt. Hon. Alan Lennox-Boyd, M.P., Minister of Transport, who has recently assumed the Presidency of the Transportation Club, was introduced to members at a dinner held at the Clubhouse, 44, Wilton Crescent, S.W.1.

The Chairman of the club, Major-General G. S. Szlumper, presided. Among those present were:—

Messrs. L. B. Alexander, H. H. C. Barton, R. A. Beckett, J. D. Black, Sir Archibald Boyd, Messrs. W. Bray, V. Bridgen, Lt.-Colonel P. M. Brooke-Hitching, Lt.-Colonel R. M. Brooker, Messrs. F. L. Castle, V. Christensen, C. M. Cock, B. W. C. Cooke, H. C. Crane, F. W. Crews, P. Croom-Johnson, George R. Curry.

Messrs. S. R. Devlin, P. C. Durrant, A. Endicott, K. W. C. Grand, Keith Granville, Colonel H. Gresham, Messrs. Roger Gresley, F. D. M. Harding, J. L. Harrington, C. F. Haywood, S. G. Hearn, R. Heathcote-Hacker, C. P. Hopkins, E. S. Hunt, D. R. Lamb, John Matthews, J. A. F. Montgomery, E. J. Morris, M. D. Morrissey, James Ness, J. R. Pike, G. Rollason, T. W. Royle.

Messrs. G. H. Searle, C. E. R. Sherrington, Colonel R. A. Smith, Messrs. J. C. Spencer, Boris Stelp, Geoffrey Sutton, Kenneth Tett, Jas. B. Thom, K. R. Thomas, A. J. Turner, J. W. Vaughan, C. C. H. Wade, G. M. Warren, Alex. J. Webb, R. L. Weir, H. A. A. While, H. Wilmot, Tarleton Winchester.

The Chairman, in introducing the Minister, and welcoming him on behalf of the Council and members of the club, gave some account of the origin of the club and of its widespread membership. They were particularly glad to have the present Minister of Transport as the first President of the club. He would find represented in the membership all aspects of transport, both home and foreign, and all shades of opinion. Whatever kind of advice he might feel in need of in relation to the Transport Bill now before the House of Commons he could be assured of obtaining it from members of the club.

Mr. Lennox-Boyd expressed his pleasure at becoming associated with the Transportation Club and said that he would do his best not only to promote its interests and

well-being, but also, as President of the club, to see that the advantages of membership of such a body were recognised by all railway officers and other transport executives. He would use his influence to induce railway officers who had left the club to resume their membership.

Mr. Lennox-Boyd continued by giving an "off the record" talk on the Transport Bill.

Mr. K. W. C. Grand thanked Major-General Szlumper for presiding at the dinner.

## New Locomotives for Iraq

(Continued from page 634)

stretchers. The axlebox guides are fitted with manganese steel liners; the coupled axleboxes are of cast steel lined with manganese steel on the horn bearing surfaces, and are fitted with insert gun-metal bearings. The cylinders are of cast iron and fitted with renewable cast-iron barrel lines. Long travel piston valves, 8 in. dia., are provided, actuated by Walschaerts valve gear.

Cylinder lubrication is provided by means of a Wakefield A.C. type, sight-feed hydrostatic lubricator fitted in the cab. The coupling and connecting rods are oil-lubricated. Armstrong oilers are provided for the coupled and bogie axleboxes. Overhead spring gear is fitted and is compensated throughout the coupled wheels. Steam and hand brakes are fitted for the engine coupled wheels, and vacuum brake equipment is provided for train working.

The ejector of the SSJ type is fitted on the side of the boiler near the smokebox and is actuated by remote control from the cab. The vacuum chamber is fitted underneath the oil feed tank on the right-hand side, at the rear of the engine. Stones electrical equipment is provided and includes Tonum "E" headlights at the front and rear ends, a T.G.I. turbo generator and cab lighting. A bunker light facilitates re-fuelling.

Gravity sanding is arranged to deliver sand to the front of the leading and rear of the trailing coupling wheels. A.B.C. PH type automatic couplers are fitted. Steel castings were provided by K & L Steel Founders Limited. The principal dimensions are as follow:—

Cylinders, dia. and stroke ...	15½ in. x 22 in.
Coupled wheels, dia. ...	3 ft. 7 in.
Leading truck wheels, dia. ...	2 ft. 4 in.
Trailing bogie " " ...	2 ft. 4 in.
Maximum axleload ...	9½ tons
Boiler pressure ...	180 lb./sq. in.
Heating surface:—	
Tubes ...	1,040 sq. ft.
Firebox ...	86 sq. ft.
Total ...	1,126 sq. ft.
Grate area ...	19 sq. ft.
Tractive effort at 85 per cent boiler pressure ...	18,800 lb.
Adhesive weight ...	36.35 tons
Factor of adhesion ...	4.3
Total weight in working order ...	58.36 tons
Water capacity ...	1,200 gal.
Oil fuel capacity ...	500 gal.

**SUPERHEATER CO. LTD.**—The directors of the Superheater Co. Ltd. have decided to pay the usual half-yearly dividend on the 5½ per cent preference stock to shareholders on the register at the close of business on December 16.

## Ministry of Transport Accident Report

*Piershill Junction, December 21, 1951:  
British Railways, Scottish Region*

Colonel R. J. Walker, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred at 5.5 p.m. on December 21, 1951, at Piershill Junction, Edinburgh, when the 5 p.m. outer circle passenger train from Leith Central, consisting of 5 vehicles, drawn by a 2-6-2 class "4" tank engine, No. 67630, running at about 25 m.p.h., collided chimney to chimney with a 4-6-2 class "8" engine, No. 60018, which was standing at a disc signal for a crossover and was forced back about 35 yd. Both engines were badly damaged. Twelve passengers and 3 servants received minor injuries. It was a fine, clear, very dark

It stopped at Piershill station and left there at 5.4. The mistake he made was failing to send "blocking back inside home signal" to Lochend and omitting to put collars on the up main to slow and up branch home signal levers. Thus when he forgot the engine there was nothing to prevent a train being offered from Lochend or his accepting it and pulling off the signals. In addition, the driver of the engine failed to carry out Rule 55 (b) promptly and the signalman was not reminded of its position, as he should have been.

The driver said that having stopped beyond the crossover, he gave three short

gave evidence in a straightforward manner. The signalman's error is plain; he simply forgot the engine, and with no excuse or good reason, although the fact that the junction was busy then and trains were running out of course and he was working single-handed no doubt had something to do with it.

The enginemans failure is important. The driver failed in not sending the fireman immediately they were detained. Although both thought they were standing only for 2 to 3 min., judging by other movements it is probable that they were there about 8 min. Another engine had been standing beside them on the

THIS LIGHT ENGINE STOOD HERE FOR 20 MIN. WITHOUT ENGINEMAN CARRYING OUT RULE 55

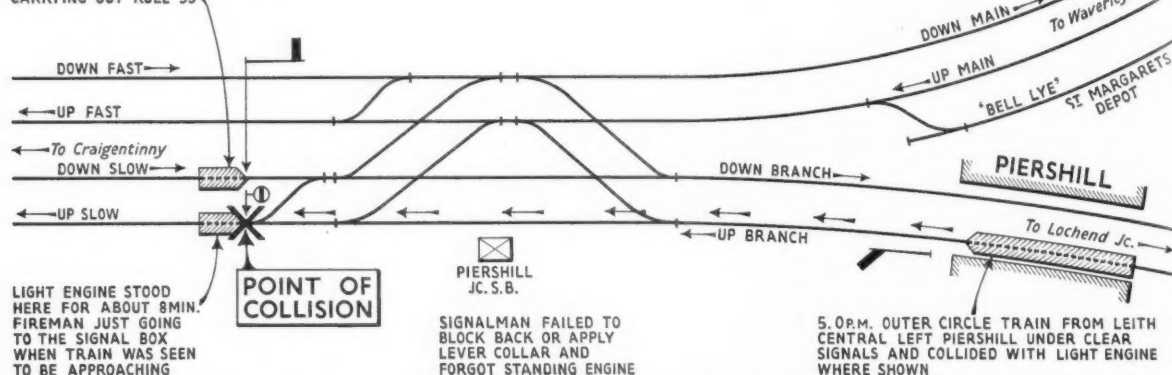


Diagram illustrating circumstances of accident at Piershill Junction, Scottish Region, December 21, 1951

evening. The accompanying diagram shows the lines, signals, etc., essential to an understanding of the case.

There are two men in the signal box but at the time one was working it while the other had his tea, normal procedure at that time of the day. He had crossed the light engine from the "Bell Lye" to the up slow line at about 4.55 p.m. with the intention that it should then reverse and proceed on the down branch after the next down train on that line at 5 p.m. This signalman said that after accepting two movements from St. Margarets he was offered at 5.1 from Lochend Junction the train involved in the collision and, a minute later, forgetting the light engine, accepted it, and offered it to Craigentinny box and cleared his signals.

whistles and thought he was there for 2 to 3 min. before the fireman left to carry out the rule. The fireman said the same and added that he had just reached the front of the engine when he saw the oncoming train 200 yd. away. Both knew the provisions of the rule and that he should have gone immediately they stopped.

### Inspecting Officer's Conclusion

This accident was brought about by the combined mistakes of the signalman and the crew of the engine. The train enginemans could not have been expected to see the engine or take effective action in time.

All these men had good reputations, clear records, and were experienced. They

down slow for 20 min. and the crew had not carried out Rule 55. During 1951 failure to do that contributed to 14 accidents reported to the Ministry of Transport. The importance of carrying out the rule strictly and literally cannot be over emphasised, for the lives and safety of both passengers and railway staffs may depend on it. No doubt sometimes it is a somewhat unpleasant duty so that there may be a temptation to put it off in the hope that the signal will be cleared. This must be resisted. Faithful observance of the rule, however, rests almost entirely in the hands of enginemans, and it is only their good sense and discipline which will ensure that it is carried out. Track circuiting will shortly be installed at Piershill Junction.

**ACCIDENT TO PASSENGER: DUTIES OF PORTER AFTER SNOWFALL.**—The Court of Appeal on November 4 allowed an appeal by the Railway Executive from a judgment awarding damages to a woman passenger injured on alighting at Heathway Station on the Tilbury Section of the Eastern Region in December, 1950. Shortly before the train arrived, there had been a snowstorm, and the plaintiff slipped on the platform, breaking her leg. The one porter on duty had not been able to use the spades, sand, and salt provided against snowfalls, as power cuts had extinguished the station lights and he had had to abandon sanding the platform so as to light the emergency lamps.

The presiding Lord of Appeal held that the duty of the defendants towards the plaintiff arose under the contract of carriage and was not merely the common law duty owed by an invitor to an invitee. It would be placing too high a burden on the defendants to say that they had a duty to put down sand as soon as the snow fell.

**RAILWAY BENEVOLENT INSTITUTION. CASUALTY FUND, 1953.**—The usual New Year's Day Collection in aid of the Railway Benevolent Institution will be made on Thursday, January 1, 1953, at all railway stations in Great Britain and Ireland. The number of employees who became members of this year's

Casualty Fund was 197,533; and assistance has been rendered to 76 widows of men killed, 463 widows of men dying from illness, and 2,975 men accidentally injured, making a total of 3,514.

**SULPHUR RECOVERY FROM FLUE GASES.**—Three papers on the sulphur content of flue gases discharged from power station chimneys will be read at a meeting of the Institute of Fuel to be held at the Royal Society of Arts, John Adam Street, London, W.C.2, on December 17. The papers will deal with flue-gas washing and its drawbacks, the ammonia process of sulphur recovery, and tests on sulphur-dioxide in air.



## Improved "Irish Mail" Services, L.M.R.

### *New facilities for next season*

Mr. J. W. Watkins, Chief Regional Officer, London Midland Region, stated at a meeting at Euston on December 1 that 15,000 more passengers were carried during this summer than last by the Irish Mail route between Holyhead and Dun Laoghaire. He added that the service had been maintained more speedily and efficiently than in any other season. The meeting was attended by Mr. D. P. Shanagher, Deputy Secretary, Department of Industry & Commerce for the Republic of Ireland; Mr. T. C. Courtney, Chairman of C.I.E.; Mr. D. O'Hegarty, Chairman of Commissioners of Public Works; Mr. E. P. Haslan, Secretary to the Revenue Commissioners; Mr. J. J. Waldron, Collector, Office of Customs & Excise; and Mr. J. A. Nugent, Chairman of An Bord Fáilte.

The results on this service have been due to the greatly improved facilities at Dun Laoghaire Pier, an increased carrying capacity of the two new mail boats, the support of a standby vessel, and additional sailings, arising out of a meeting of all parties concerned and convened by the Minister for Industry & Commerce on September 7, 1951. Another contribution to the ease with which the traffic has been handled has been the close co-operation between British Railways, C.I.E., the Commissioners of Public Works, the Customs staffs of the Revenue Commissioners at Holyhead and Dun Laoghaire, Garda Síochána, and the Department of Agriculture. There were 166 sailings from Holyhead and 171 from Dun Laoghaire, compared with 154 and 157 last season.

Because of limited facilities for Customs examination in the past, British Railways steamers had until this year to arrive and depart from the west side of the pier at Dun Laoghaire only, but the new spacious double-deck accommodation for Customs on the east side, which was brought into use in June, now enables the vessels to use both sides of the pier simultaneously and the ships now embark passengers on one side of the pier without interfering with the arrival of passengers on the other. Thus the long waits, unavoidable in the past, have been eliminated.

Special direction signs have been erected by the Commissioners of Public Works at the approaches to the pier and also on the pier itself, so that the Customs examination and the embarkation of passengers can be carried out with speed and without confusion. Moreover, the extensive alterations to the layout and to the departure platform at the pier, undertaken by C.I.E., and the public address system jointly installed by British Railways and C.I.E., have been of benefit. Over this system visitors get immediate information not only of times of trains leaving the pier but also of times of connecting services to all parts of Ireland.

### **New Vessels**

The increased carrying capacity of the two new mail vessels, the *m.v. Cambria* and *m.v. Hibernia*, of 2,300 passengers per ship, together with the relief vessel *Princess Maud*, enabled the increased passenger traffic by the Holyhead-Dun Laoghaire route to be dealt with satisfactorily. In addition to the normal sailings from Holyhead at 3.25 a.m. and 2.20 p.m., and from Dun Laoghaire at 9.20 a.m. and 8.40 p.m. there were additional sailings at the weekends, including Bank Holiday weekend. The incoming peak period was reached on July 26 when 8,387 passengers arrived at

Dun Laoghaire and 3,790 departed. This was balanced on August 9 when 6,993 departed and 4,049 arrived.

With such large numbers of passengers it was essential on occasion, in the interests of the travelling public, to introduce steamer reservation tickets to regulate the embarkation of passengers, and this was found to be necessary in connection with 65 sailings from Holyhead and 38 from Dun Laoghaire.

### **Plans for Next Year**

Whilst the improvement at Dun Laoghaire, previously mentioned, together with improved facilities installed at Holyhead in

June, 1951, have made the Holyhead-Dun Laoghaire route to Ireland still more popular, the London Midland Region is alive to the need for other amenities. The sailings by which steamer reservation tickets will be necessary next year will be announced early in 1953 and the issue of these tickets will begin at a much earlier date than in previous years. One facility, which will be available by the end of this year at Holyhead, is the provision, in part of the station hotel building, of spacious lounges and buffet facilities, for passengers awaiting departure by train and ship.

Another feature in the summer of next year will be a relief ship at 6.20 p.m. from Dun Laoghaire on heavy traffic nights instead of at 10.45 p.m. as was the case this year. It is felt that a 6.20 p.m. departure will be much more convenient to travellers.

## New Telephone Inquiry Facilities at Euston

### *Automatic equipment to relieve main exchange*

In order to improve the handling of public telephone inquiries relating to passenger train services from both Euston and St. Pancras, which in the past have caused congestion on the group of Post Office lines serving Euston Station (Euston 1234), modern automatic equipment has been installed to deal with these calls and a new telephone number (Euston 7070) has been allotted and advertised.

The telephone inquiry bureau in Euston House is equipped to allow 20 inquiry clerks to answer all inquiries of this nature, and incoming calls were in the past received at the Euston Station telephone exchange, whence they were manually extended to the bureau by means of the normal exchange cord circuits.

At holiday times the number of public inquiries rises sharply, and up to the present the overflow of calls has been absorbed at the manual switchboard. In addition, the congestion on the incoming lines from the public exchange prevented the normal flow of administrative telephone traffic and imposed a severe strain on the switchboard operating staff.

Limitations of space made it impossible to increase the number of switchboard positions to ease the situation and the only alternative was to divert the inquiry traffic away from the main exchange as much as possible. It was accordingly decided to allocate a new telephone number in the Post Office Directory for all passenger train timetable inquiries and to arrange for all calls on the group of lines associated with this number to be connected directly to the telephone inquiry bureau, making provision to store any calls which could not be answered immediately in chronological order for attention as soon as an inquiry clerk became disengaged.

The new equipment was brought into use on November 2. It is so designed that it is possible to divert calls reaching the main switchboard on the Euston 1234 number into the automatic magazine feed to the inquiry bureau; and for the inquiry bureau to transfer to the main switchboard any calls wrongly originated on the new number. Facilities also exist to permit all inquiry calls to be handled at the manual switchboard in the event of breakdown of



*Inquiry clerks' telephone cabinets at the Euston House bureau*

the automatic feeding system or during service overhaul.

The apparatus fitted in the telephone inquiry bureau consists of a supervisor's cabinet and 20 inquiry clerk's cabinets, each of the latter mounted on a desk fitted with plate glass screens on three sides to minimise noise interference between adjacent positions. Each clerk's cabinet has keys enabling the clerk to (1) Answer an incoming inquiry call; (2) hold the call while speaking to the supervisor over a separate circuit; (3) transfer the incoming inquiry call to the main manual switchboard; and (4) shut down the position when going off duty to prevent further calls being allotted to that position.

Provision has been made for ten more inquiry clerk's cabinets to be connected if these are required in future. The supervisor's cabinet enables the supervisor to monitor any incoming inquiry call, to call any inquiry clerk independently to give instructions, or to take over any "difficult" inquiry, if necessary.

#### Notice of Waiting Calls

Lamps are fitted on this cabinet to indicate the formation of a "queue" of incoming calls, with a capacity of 20 calls, and keys are provided by means of which the length of queue can be limited to either 5, 10, or 15 calls. In accordance with the setting of these keys an audible alarm will sound when queues of the appropriate length are reached. An additional warning is given if any call has been held in the queue for more than a predetermined time, such as 30 sec. These facilities inform the supervisor of the existence of overflow calls and also of the rate at which calls are being answered. The caller receives the ringing tone whilst waiting in the queue, or, on transfer, until answered.

The apparatus racks in the telephone exchange are equipped for 20 incoming inquiry lines in the Euston 7070 group and space is allowed for an additional rack to carry a further 20 lines should these be required. Six transfer circuits are provided to allow calls to be transferred from the main exchange manual board to the bureau, and six similar circuits permit calls to be transferred from the bureau to the manual board. Both these groups may be increased to ten if the need should arise by the fitting of additional equipment.

The holding time for most inquiry calls is very brief and the speed of distribution of calls via the automatic equipment is so much greater than that obtaining with manual operation that the capacity of the inquiry bureau for handling traffic will be considerably increased. Should the automatic equipment fail for any reason, emergency working can be set up by the operation of a switch under the control of the bureau supervisor. In this condition all incoming calls made on the Euston 7070 group of lines would be answered by the manual switchboard and connected to the bureau via the normal cord circuits until the fault was rectified.

The inquiry bureau also deals with inquiries as to the running and arrivals of trains at Euston. To facilitate transmission of information, a teleprinter in the bureau receives particulars of the running of trains at Crewe, Rugby, Tring, and Watford simultaneously with the receipt of this information in the Euston train arrival bureau.

To enable inquiries regarding arrivals at St. Pancras to be dealt with, a direct telephone line is provided between the inquiry bureau and the St. Pancras telegraph office.

### B.E.A.M.A. Catalogue Luncheon

A luncheon was given by the Chairman and Council of the British Electrical & Allied Manufacturers' Association at the Connaught Rooms, London, on December 1, to mark the publication of the second edition of the B.E.A.M.A. catalogue.

Sir Harry Railing, President of the Association, in proposing the toast of "Exports and the Electrical Industry," said it was proudly maintained that Britain and the U.S.A. were the two greatest export nations in the electrical industry. In Britain, after textiles and vehicles, the industry made the largest contribution to the country's exports. Among the co-operative activities of B.E.A.M.A. was the launching of their export catalogue, designed to show the world how completely the vast electrical field was covered and how many sources of supply in each speciality were available. The second edition published that day now included sections in four additional languages. As well as growing thus in value, it had grown also in volume, the pages having been increased from 850 to 1,000 and the circulation from 12,000 to 16,000. Another B.E.A.M.A. contribution to exports being inaugurated simultaneously was an *Electrical Export Bulletin* detailing the services available to the Association's members.

On the subject of quality Sir Harry Railing said that this was the outstanding criterion for permanency in export markets. The buyer who decided on price alone, not taking into consideration freedom from breakdowns and length of life, did a disservice to himself and his country. Research, design, and manufacturing facilities in Britain stood as high as ever they did and were unsurpassed. There was every reason why the discerning buyer should come here. We offered in return a permanent market for the materials and food required by 50 million consumers in this country, and the invaluable invisible export of our experience.

Mr. H. R. Mackeson, Secretary for Overseas Trade, said in the course of his reply that the Government was determined that, without encouraging a mad subsidy race, industry should be able to offer terms

to overseas customers that would be attractive despite competition from elsewhere. Although we could not afford to sell goods on very long credit, cases in which some extension of payment seemed justified would be considered, for the Government had no rigid views on this problem. No opportunity was lost in bilateral trade negotiations of securing quotas which might open to British goods markets where difficulties and uncertainties existed because of exchange and quantitative restrictions. The record of the electrical industry in the export field was excellent, and he was glad to say that its exports this year were expected to total £210 million, against £189 million in 1951.

### Meal Box Service for Travellers

A new development in railway catering has been introduced by the Refreshment Room Service of the Hotels Executive, in the form of a streamline version of the old luncheon basket. Known as the Kompakt Meal Box, the aim is to provide complete meals with menus to suit individual wishes at prices from 7s. 6d.

The main dish may vary from cold meat and salad to chicken or salmon, when in season, accompanied by a bottle of wine or beer, followed by a sweet, biscuits or roll, butter and cheese, coffee or tea. All are contained complete with cutlery, condiments, chutney, or pickles in an anodised aluminium box, 14½ in. long, 12 in. wide and 5 in. deep, and weighing only 3½ lb. with contents. It has a convenient carrying handle and may be rested on the lap while the meal is eaten.

Clips in the lids of the box hold a vacuum flask, a cup, a beaker, and two bottles of wine, beer or minerals. In the lower half of the box is a two-compartment plastic dish for the main course and sweet, with separate compartments for cutlery, condiments, chutney or pickles.

Kompakt Meal Boxes are now available to private parties of from 6 to 24 at many main-line railway stations. The boxes should be handed in at the arrival station at the end of the journey.



*The Kompakt meal box, successor to the luncheon basket*

## Christmas Travel Arrangements

Train services in England and Wales during the Christmas holidays will be as follows: Christmas Eve, weekday service augmented; Christmas Day and Boxing Day, Sunday service; Saturday, December 27, usual Saturday service (Sunday service in Southern Region), adjusted as necessary; and Sunday, December 28, Sunday service augmented.

Restaurant or buffet facilities and reserved seats will be available in most of the regular long-distance trains and in many of the special holiday expresses.

Early Morning tickets will be issued each day where the train service permits, and shift workers' tickets will be available as usual. Where Cheap Day tickets are normally issued on Thursdays and Fridays, they will be issued on Christmas Day and Boxing Day without any restrictions on journey times. Day return tickets in the London area and Winter cheap tickets in the provinces will be issued in the normal way, but the usual time restriction on Winter cheap tickets will be lifted, in some cases, on Christmas Day and Boxing Day. Commercial travellers' weekend tickets will be issued as usual.

### Steamship Services

The Dover-Dunkerque Night Ferry, the Newhaven-Dieppe service, the Harwich-Hook of Holland day and night services, and the Weymouth-Channel Islands service will not run in either direction on Christmas Day, and the Southampton-Havre steamer will not sail on Christmas Eve or Christmas Day.

Sailing tickets will be required for the following services to Irish ports:—

Holyhead-Dun Laoghaire, December 20, 24; Heysham-Belfast, December 19, 20, 22, 23; Fishguard-Rosslare (night sailing), December 19, 22, 23, 24; Fishguard-Waterford (night sailing), December 19, 22. No reservation or sailing ticket will be required on any route from Ireland.

Normal train services and ticket arrangements will operate in Scotland, but there will be additional trains to and from England. British Railways expect to carry about five million parcels during December and ask senders to despatch early and take special care over labelling and tying their packages.

## Parliamentary Notes

### Transport Bill Committee Stage

The House of Commons on December 3 began the detailed examination of the Transport Bill in Committee, in accordance with the guillotine timetable, which provided for Clauses 1 and 2 to be completed on the Wednesday. At the time we went to press, 24 Opposition and four Conservative amendments had been tabled to Clauses 1 and 2. Official Opposition amendments sought to limit the duty of disposing of its road haulage undertakings, imposed by the Bill on the B.T.C., to disposal of only that part of them which the Commission considered unnecessary to retain. Other amendments tabled provided for enlarging the membership of the Road Haulage Disposals Board by a second member appointed from nominees of the B.T.C. and additional members representative of trade, industry, and finance.

### Iron and Steel Bill

When the debate on the Second Reading was resumed on November 27, Mr. John Freeman (Watford—Lab.) said the

Bill led straight back to the pre-nationalisation situation. Under Labour the industry would be returned to public ownership as quickly as possible.

Mr. A. R. W. Low (Parliamentary Secretary to the Ministry of Supply) said the Bill sought to destroy a Government monopoly and restore conditions under which the industry could work in competition, with due co-ordination and public supervision. The industry had been active in arranging supplies of raw materials. He reminded the Opposition that in 1949 the industry was anxious to participate in another raw material supply scheme in Newfoundland, but the Labour Government was not prepared to finance it, because of dollar difficulties. Raw materials supplies would be a major problem for many years.

There would be both full-time and part-time members of the Board and the same argument applied to the Agency of Treasury receivers—men with the necessary qualifications and experience for the duties of the Agency, and not Treasury officials.

It was intended to associate the new Board with the work of the Governmental delegation already in working relations with the Schuman Plan.

Mr. Harold Macmillan (Minister of Housing & Local Government) winding up for the Government, said that in co-operation with the Schuman Plan, the proposed Board, relieved of ownership and management responsibilities, would be a far better adviser to the Government than the Steel Corporation. The Board would not have the power to control the import policy of the country; that would rest with the Government of the day.

On a division the motion for the Second Reading was carried by 305 votes to 269. The Bill was then read a Second Time and committed to a Committee of the whole House.

When the financial resolution authorising expenditure under the Bill was considered in committee, Mr. George Strauss (Lambeth, Vauxhall—Lab.) said that in view of the large amount of business before the House, the Opposition did not propose to discuss the resolution in detail on this occasion, but to vote against it. On a division, the resolution was carried by 303 votes to 267.

### Dieselisation

Lord Leathers said in the House of Lords fuel policy debate on November 19 that the B.T.C. was examining the Ridley Committee Report closely. He mentioned the £500,000 diesel train programme outlined in *The Railway Gazette* of November 14, and dieselisation of marshalling yards and branch lines. The Government would give full weight to any economy in the use of fuel that it could offer. In France and elsewhere small coal was freely used, whereas British locomotives required large fuel. Something of that sort might have to be considered, even although they continued to use solid fuel.

Lord Teynham hoped the Government would foster experiments with a gas turbine locomotive that used pulverised coal.

Lord Falmouth said that the efficiency of 22 per cent claimed for the electric grid, against 5.8 per cent. for the steam locomotive, was the figure at the busbar at the generating station. He thought the comparable efficiency of the electric locomotive was 17.18 per cent. Even so, electrification had a great advantage in fuel consumption, though the enormous capital charges involved ruled out whole-

sale electrification at present. Diesel-electric traction had revolutionised rail transport in U.S.A., but the cost of the diesel-electric (two-and-a-half times that of the steam locomotive of comparable size) would be very hard to absorb, in the different conditions obtaining in Britain.

Diesel railcars, Lord Falmouth went on, had been used for some years by the G.W.R. and the Western Region. Why the other Regions had not followed that example he did not know.

### Gas Turbine

Mention had also been made, he added, of the gas turbine being tried out in the Western Region. A gas turbine fired by coal was also under development. To judge from figures, there seemed to be no advantage in the gas turbine against the diesel as to economy. The gas turbine showed a considerable increase in cost, and maintenance expenses so far were high. Unless there was a big change in gas turbine development, which might come about soon, as research was very active, there were many snags; one of the most important was that it was relatively inefficient with low loads.

## Staff & Labour Matters

### Railway Shopmen's Wage Claim

Agreement was reached at a meeting of the Railway Shopmen's National Council on November 27 under which adult male railway workshop staff are to receive an increase of 7s. per week with effect from November 2, 1952. The increase is similar to that granted to railway salaried and conciliation staff under the terms of Railway Staff National Tribunal Decision 14, which was published in October.

The position of apprentices, boys, and youths, and of female workshop staff, was deferred for consideration at an early meeting of the Railway Shopmen's National Council.

As a result of the recent agreement the minimum weekly rate of an adult railway workshop employee will be £5 17s. 6d., while the skilled fitter's rate will be £6 16s. 6d. London rates are 3s. per week more.

### Women Workers in Engineering Industry

Wage increases of 1½d. an hour, or 6s. 5d. per week, were announced last week for women employees in the outside engineering industry. Proportionate amounts were also agreed for girls under 18 years of age.

## Contracts & Tenders

The Antofagasta (Chili) & Bolivia Railway has ordered from the Dunlop Rubber Co. Ltd. a number of Dunlopillo rubber mattresses for use in sleeping cars.

C. M. Hill & Co. (Engineers) Ltd., has received on behalf of its principal, S.A. Anglo-Franco-Belge, La Croyère, Belgium, an order from the Government of India for 80 2-8-2 steam locomotives and tenders, class "WG" 5 ft. 6 in. gauge.

The Indian Government has placed the following further contracts under the 1953 programme:—

S.A. La Brugeoise et Nicaise & Delcuve, Belgium: 200 metre-gauge carriage body shells; 2,000 metre-gauge four-wheel covered wagons; 50 narrow-gauge bogie underframes;



20 narrow-gauge four-wheel goods brakevans; 12 narrow-gauge bogie rail wagons; 300 metre-gauge bogie open wagons; 150 metre-gauge four-wheel goods brakevans; 120 metre-gauge bogie petrol tanks; 44 narrow-gauge bogie open wagons.

Les Ateliers Metallurgiques S.A., Nivelles, Belgium: 7 "P" class locomotive boilers.

The Government of Pakistan is inviting tenders for the supply of 650 steel tyres for broad-gauge locomotives. Further details are given under Official Notices on page 643.

The United Kingdom Trade Commissioner at Johannesburg has notified the Board of Trade, Commercial Relations & Exports Department, of a call for tenders issued by the South African Railways for the supply of 400,000 clipbolts and nuts complete with spring washers, 100,000 No. 2, 100,000 No. 3, and 5,000 No. 4 rail clips.

Tenders should reach the Chairman of the Tender Board, Room 715, P.F.A.C. Building, 15, de Villiers Street, Johannesburg, by 9 a.m. on January 8. A copy of the tender documents is available for inspection at the Board of Trade by representatives of United Kingdom manufacturers.

The Board of Trade, Special Register Information Service, has reported a call for tenders for 500 four-wheel all-steel covered goods wagons, metre-gauge, issued by the State Railways of Thailand.

Tenders should reach the Offices of the Stores Superintendent, State Railways of Thailand, Bangkok, by 2 p.m. on Monday, January 26, 1953.

A copy of the tender documents together with the drawings is available for inspection at the Board of Trade by representatives of United Kingdom manufacturers. A further copy of the tender documents only is available on loan in order of written application; reference CRE/39572/52 should be quoted.

The United Kingdom Trade Commissioner at Delhi has notified the Board of Trade, Commercial Relations & Exports Department, of a call for tenders issued by the Directorate General of Supplies & Disposals, Government of India, for the supply of:—

99,954 rings, gland, packing, rubber for 1½ in. piston rod, to specification.  
4,782 rings, gland, packing, rubber, "F" type 24 in. cylinders to specification.

Tenders should reach the Office of the Director General of Supplies & Disposals, New Delhi, by Tuesday, December 30. A copy of the tender documents, without drawings, is available for inspection at the Board of Trade by representatives of interested United Kingdom manufacturers. A further copy is available on loan in order of written application; reference CRE/39492/52 should be quoted.

The United Kingdom Trade Commissioner at Delhi has notified the Board of Trade, Commercial Relations & Exports Department, of a call for tenders issued by the Directorate General of Supplies & Disposals, Government of India, for the supply of:—

6,173 piston rods of various types for vacuum brakes, some of brass and some of stainless steel, all to specification.

135 pistons of various types for vacuum brakes to specification.

4,280 piston rod cotters (C. & W.) (steel class 11) to specification.

Tenders should reach the Office of the Director General of Supplies & Disposals, New Delhi, by 4 p.m. on Monday, December 15, 1952. A copy of the tender documents is available for inspection at the Board of Trade by representatives of United Kingdom manufacturers. A further copy is available on loan in order of written application; reference C.R.E./39543/52 should be quoted.

## Notes and News

**Institute of Transport.**—The Annual General Meeting of corporate members of the Institute of Transport will be held on Monday, December 15, at 80, Portland Place, W.1, at 5.45 p.m.

**Assistant to Transport Superintendent Required.**—Applications are invited for the post of assistant to transport superintendent, between 30 to 35 years of age, required by iron and steel manufacturers on the North East Coast. See Official Notices on page 643.

**Handing Over Ceremony of "YP" Class Locomotive.**—On November 13, an interesting ceremony took place at the works of the North British Locomotive Co. Ltd., Glasgow, when Mr. K. B. Rao, Director-General, India Store Department (representing the High Commissioner for



Mr. K. B. Rao in the cab of the "YP" class locomotive for India. In the foreground is Mr. T. A. Crowe, Chief Managing Director, North British Locomotive Co. Ltd.

India) formally accepted the "YP" class locomotive which is to be exhibited at the Indian Railways Centenary Exhibition to be held in New Delhi from February 28, to April 6, 1953. The locomotive was described and illustrated in our November 14 issue.

**Railway Development Association Midland Area.**—A Midland Area of the Railway Development Association has been formed, with Mr. E. L. Kenworthy, "Wyndcliffe," Colleshill Street, Sutton Coldfield, as Honorary Treasurer. The annual subscription is 2s. 6d. The Railway Development Association was formed in London in November, 1951, with the main object of bringing together all who believe that branch line services faced with

extinction may be preserved by applying fresh operating methods. The Midland Area Committee includes representatives of the Birmingham Chamber of Commerce, whose Transport Committee has requested the assistance of the Association in promoting the policy advocated in the Junior Chamber's report on Birmingham suburban transport. This report is the subject of editorial comment in this issue.

**Diesel Engine Users Association.**—A paper, "Report on Heavy Oil Engine Working Costs, 1950-51" will be read before the Diesel Engine Users Association at Caxton Hall, Westminster, S.W.1, on Thursday, December 18, at 2.30 p.m.

**Institution of Civil Engineers.**—The Unwin lecture, "The Development and Functions of the Research Department of the Railway Executive," will be read by Mr. T. M. Herbert before the Institution of Civil Engineers, Great George Street, Westminster, S.W.1, on December 16, at 5.30 p.m.

**Institution of Locomotive Engineers.**—On December 17, a paper will be read before the Institution of Locomotive Engineers, at the Institution of Mechanical Engineers, Storey's Gate, St. James's Park, S.W.1, on "Recent Developments in the Use of Rubber in Railway Engineering" by Mr. S. W. Marsh, at 5.30 p.m.

**Road Accidents in September and October.**—Road casualties so far reported as having occurred in October total 17,620, including 413 killed and 4,429 seriously injured. Although there may be a few more reports to come in, it is expected that the final figures will be considerably lower than in October, 1951, when there were 18,597 casualties, including 480 killed and 4,369 seriously injured. Final figures for September show that casualties totalled 18,134, of which 421 were fatal and 4,377 serious. Compared with September, 1951, there was a reduction in the total of 1,676. There were 17 fewer killed, and 376 fewer seriously injured.

**Railway Students' Association.**—The paper to be read before the next meeting of the Railway Students' Association at the London School of Economics & Political Science, Houghton Street, W.C.2, on Wednesday, December 10, will be entitled "Some Problems of a Transport Manager," and not as previously announced. It will be presented by Mr. T. J. D. Morris, who has had experience in the Goods Department of the former Great Western Railway, and is now Assistant Transport Manager of Chiswick Products Limited. Mr. J. R. Pike, Chief Rates & Charges Officer, The Railway Executive, has agreed to take the chair.

**Railway Students' Association Dinner.**—The annual dinner and dance of the Railway Students' Association was held at the London Transport (South Kensington) Dining Club on November 26. A reception by Mr. C. P. Hopkins, President of the Association and Chief Regional Officer, Southern Region, British Railways, preceded the dinner, at which the toast "The Ladies and Visitors" was proposed by Mr. Hopkins and responded to by Mr. J. P. Hine, of Modern Transport. Mr. S. E. Bellamy, Chairman of the Committee of the Association, speaking on behalf of the members, thanked Mr. Hopkins for presiding, and also referred to a letter that had been received from Field-Marshal Sir William

## OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is exempted from the provisions of the Notification of Vacancies Order, 1952.

**ASSISTANT to Transport Superintendent of large Iron and Steel Manufacturers, North East Coast,** age 30/35 years; railway operating and commercial experience essential; state age, qualifications and salary required.—Box 687, Railway Gazette, 33, Tothill Street, London, S.W.1.

**BOUND VOLUMES.**—We can arrange for readers' copies to be bound in full cloth at a charge of 25s. per volume, post free. Send your copies to the SUBSCRIPTION DEPARTMENT, Tothill Press Limited, 33, Tothill Street, London, S.W.1.

**THE High Commissioner for Pakistan invites tenders for the supply of 650 STEEL TYRES for Loco and tender B.G. stud fastening type to rolled dimensions:—Forms of tender, which are returnable by 29th December, 1952, may be obtained from the Supply Secretary, Supply & Stores Department, 39, Lowndes Square, London, S.W.1. between the hours of 10 a.m. and 3 p.m. Mondays to Fridays, on payment of a fee of Five Shillings only (not returnable) per tender. The reference No. PRR 3506/52/EHW should be quoted on all applications for tender forms.**

**GENERAL ENGINEERING DRAUGHTSMAN** required for old and established Railway & Civil Engineering Plant Manufacturers. Should have O.N.C. and good knowledge of Mathematics. Age 24-28 years. At least A.E.S.D. Rates on commencement. Apply Works Manager, WILLIAM JONES LIMITED, Westmoor Street, Charlton, S.E.7.

**IMPORTANT wagon builder desires Sales Engineer for Belgian Plant.** Work to consist of estimating costs, preparing detailed technical quotations, doing sales work both written and by personal contact. Spanish and French languages useful. Technical training essential. Preference given to man willing to travel. Excellent future for man with right combination of sales and technical abilities. Minimum age 25, maximum depending on experience but preferably not over 45. Excellent salary depending on qualifications. Reply Box 679, The Railway Gazette, 33, Tothill Street, London, S.W.1.

**N.E.R. HISTORY.**—Twenty-Five Years of the North Eastern Railway, 1898-1922. By R. Bell, C.B.E., Assistant General Manager, N.E.R. and L.N.E.R. Companies, 1922-1943. Full cloth. Cr. 8vo. 87 pages. 10s. 6d.—The Railway Gazette, 33, Tothill Street, London, S.W.1.

Slim, a Vice-President of the Association, who has been appointed Governor General of Australia, expressing his continued interest in the activities of the Association. The dinner was followed by dancing and a social evening.

**Locomotive & Carriage Institution of Great Britain & Eire.**—On Thursday, December 18, a paper "Diesel Locomotives" by Mr. H. M. McIntyre, will be read before the Locomotive and Carriage Institution of Great Britain & Eire, at the Railway Clearing House Board Room, 163, Eversholt Street, W.1, at 7 p.m.

**Increased Freight Charges.**—The 5 per cent increase in the freight, dock, and canal charges of the British Transport Commission announced by the Minister of Transport on November 18 came into effect on December 1. The application was reported in our November 7 issue, and the Minister's statement was given in our issue of November 21. It is estimated that the increase will produce about £12 million a year. On the same date Road Haulage Executive rates were also increased by 5 per cent, this being estimated to raise an additional £2½ million a year.

**Inter-Allied Railway Club, Paris: Change of Name.**—The Inter-Allied Railway Club (Foyer Interallié des Chemins de Fer) 11 Rue de Milan, Paris, 9e., is to be known as the Intercontinental Transportation Club (Club Intercontinental des Transports), enlarging both its scope and membership, which will embrace all modes of transport. The subscription for 1953 will be fr. 1,000. The club's New Year celebrations will take place on December 31; the price of tickets including champagne supper is 1,500 francs per person.

**Nine Extra Christmas Sailings from Holyhead.**—Because of the large demand for travel to the Republic of Ireland for Christmas, the London Midland Region has arranged a further sailing from Holyhead at 8 a.m. on Monday, December 22, making nine additional sailings in all for the Christmas holidays. Steamer reservation tickets are necessary for all sailings to the Republic during the period, and early application is necessary. Steamer reservation tickets for Christmas will also be required by passengers travelling via Heysham and Belfast.

**Closing of the Canterbury & Whitstable Railway.**—The oldest section of the Southern Region of British Railways, the 6½-mile branch from Canterbury West to Whitstable Harbour, opened on May 3, 1830, was closed completely as from December 1. The line had been used only for freight traffic since Decem-

ber 31, 1930. As there were no Sunday services, the last trains ran on Saturday, November 29. At 11.30 a.m., an engine and two brake vans left Canterbury for Whitstable, and returned with eight wagons. Canterbury was reached at 1.38 p.m. Representatives of the B.B.C. and the local press travelled with the train to and from Whitstable. There was no official ceremony, but the approach to the former passenger station at Whitstable Harbour was decorated with flags by the local Boy Scouts, and a large crowd gathered to witness the arrival and departure of the train. Smaller groups assembled at Canterbury and at several places along the route. The train left and arrived at Canterbury to the accompaniment of exploding detonators.

**British Railways Coal, Iron and Steel Carriings.**—British Railways cleared 3,206,000 tons of deep-mined and open-cast coal in the week ended 6 a.m. on December 1. During the week ended November 22, 207,544 tons of iron and steel from the principal steelworks and 310,000 tons of iron ore were carried.

**United Railways of the Havana Scheme of Arrangement Approved.**—At meetings of stockholders and shareholders of United Railways of the Havana and Regla Warehouses Limited in London last week, the scheme of arrangement drawn up by the board was passed by large majorities. (Details of the scheme were set forth in our October 24 issue.) Mr. W. R. Tomkinson, who presided in the absence of Mr. R. G. Mills, the Chairman, who is in America, said that as a result of discussions it had been decided that the best solution of the railway problem of Cuba was to adopt recommendations made by the World Bank in its report of December, 1950, that the United Railways and the Consolidated Railways of Cuba should be combined into a new company and operated as a single system; the individual sugar companies should obtain a substantial minority interest in the new company; and that the Government of Cuba should give full support to the reorganisation and provide reasonable assurance as to payment of existing obligations, payment for new services, conditions of employment, and competition with other forms of transport.

**"The Man Who Came to Dinner."**—On Thursday, Friday, and Saturday last week the British Railways L.M.R. (London) Dramatic Society presented "The Man Who Came to Dinner" at the Rudolf Steiner Theatre, W.1. As Sheridan Whiteside, the famous literary man who disrupts the domestic life of the house where he is recovering from the effects of a fall, Jack

Pegg made the most of the opportunities afforded by the studied petulance and eccentricities of the involuntary distinguished guest set against a small town domestic background. Margaret Kirby as his secretary, and Reginald Barker as the local newspaperman, whose romance Whiteside sets out to disrupt as a threat to his personal convenience, supported him excellently. Jessie Wilson, Ronald King, Constance Wallis, and Reginald Brockwell dealt adequately with the trials of the Stanley family, and all the smaller parts were rendered as distinctive character studies with the competence that does so much for the success of this society's productions and is a tribute to the work of the producer, Mr. Allan T. Smith.

**Improvements at Bletchley Station, London Midland Region.**—The London Midland Region has completed the renovation of Bletchley Station at a cost of £20,000. The station has been re-decorated, and given a new entrance, and the accommodation for the public and staff has been much improved.

**Traffic Delayed by Severe Weather.**—Inclement weather last weekend caused widespread delays to transport services in the British Isles. On Saturday night a Merthyr to Abergavenny train was embedded in a snowdrift near Pen-y-Wern Junction, east of Dowlais. Four engines sent to help also were buried in drifts. The 24 passengers spent the night in the train, which was almost completely covered. Steam heating was provided by the engine. Passengers and crew were released on Sunday morning after snowploughs had worked all night. Train services on the Kent & East Sussex line of the Southern Region were interrupted by floods near Salehurst, east of Robertsbridge. Passengers from Yarmouth, Isle of Wight, in British Railways m.v. *Farringford*, were transferred to a launch a mile from Lymington, on Sunday evening, when one of the ship's paddles was damaged by driftwood. High seas were running in the Solent at the time. Later the *Farringford* was towed to Southampton.

**Steel Company of Wales: Tinplate Development Scheme.**—Government approval has been given to a £40 million scheme, involving a new tinplate mill, to be carried out by the Steel Company of Wales at Velindre, between Swansea and Llanelly. This and other developments mark the second stage in the firm's programme of modernising the tinplate industry. Mr. Duncan Sandys, Minister of Supply, on October 7, opened the Trostre Mills, Monmouthshire, which completed the first stage. At Velindre, besides a new five-stand cold reduction mill, there will be additional coke ovens, an extension of the

sintering plant, a fourth blast furnace, and four open-hearth steel melting furnaces. Mr. E. H. Lever, Chairman of the Steel Company of Wales and Richard Thomas & Baldwins Limited, announced approval of the new scheme at a dinner to civic authorities at Port Talbot on November 29.

### Forthcoming Meetings

December 8 (Mon.).—Institute of Transport, at the Jarvis Hall (R.I.B.A.), 66 Portland Place, W.1, at 5.45 p.m. "The Henry Spurrier Memorial Lecture, 'The Operation and Economics of Passenger Road Transport,' by Mr. James Amos.

December 8 (Mon.).—Society of Chemical Industry, at the Grand Hotel, Leopold Street Sheffield, at 6.45 p.m. "The Corrosion Resistance of Stainless Steel," by Dr. U. R. Evans.

December 8 (Mon.).—Locomotive & Carriage Institution of Great Britain & Eire, Doncaster Centre, at the Doncaster Plant Works Library, British Railways, Eastern Region, at 6.30 p.m. "Injectors," by Mr. R. Metcalf.

December 8 (Mon.).—Railway Students' Association. Visit to St. Mary's Mechanised Freight Depot, Derby. Party leaves St. Pancras at 8.15 a.m.

December 9 (Tue.).—Permanent Way Institution, Leeds Section, in Room 602, District Engineer's Office, City Station, at 7 p.m. Annual General Meeting and Brains Trust.

December 9 (Tue.).—South Wales & Monmouthshire Railways and Docks Lecture & Debating Society, at the Angel Hotel, Westgate Street, Cardiff. "Modernisation and Mechanisation of Handling Facilities," by Mr. F. Grundy, at 6.30 p.m.

December 9 (Tue.).—Institute of Transport, Metropolitan Graduate and Students Society, at 80, Portland Place, W.1, at 5.45 p.m. "Statistics in Transport Management," by Mr. J. F. H. Kearney.

December 10 (Wed.).—Railway Students' Association, at the London School of Economics & Political Science, Houghton Street, Aldwych, W.C.2, at 6.15 p.m. "Some Problems of a Transport Manager," by Mr. T. J. D. Morris.

December 10 (Wed.).—Newcomen Society, at the Institution of Mechanical Engineers, Storey's Gate, S.W.1, at 5.30 p.m. "The Decapod Locomotive of the Great Eastern Railway," by Mr. W. O. Skeat.

December 11 (Thu.).—The Permanent Way Institution, Manchester and Liverpool Section, at the Manchester College of Technology, at 6.30 p.m. "Use of Mechanical Appliances in Track Maintenance," by Mr. T. D. Turner.

December 11 (Thu.).—British Railways, Western Region, Lecture & Debating Society, at Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, at 5.45 p.m. "Management Today and Tomorrow," by Mr. F. C. Hooper.

December 12 (Fri.).—Institution of Railway Signal Engineers at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2, at 6 p.m. "Running Line Capacity," by Mr. B. F. Wagenrieder.

December 15 (Mon.).—Institute of Transport, Annual General Meeting of Corporate Members, at 80, Portland Place, W.1, at 5.45 p.m.

### Railway Stock Market

Stock markets have displayed more activity now sentiment has benefited from the hope that the Commonwealth conference will make important decisions for expanding the sterling area's export trade and rebuilding gold and dollar reserves. It is realised that the outlook for world trade will turn a good deal on the policy of the new U.S. Government, which will not be clarified until the early part of next year; but the Commonwealth conference is regarded as an indication of confidence in the future. Industrial shares have been in better demand, and with jobbers none too well supplied with stock as there has been little selling in recent weeks, prices have been marked up sharply in many instances. Markets were also helped by the further improvement in British Funds, though news of the new Northern Rhodesian loan, and the belief that more issues in the gilt-edged market are likely before long, prevented best prices from being held in this section. Nevertheless, the view is widely held that over the next few months, British Funds could go well above current levels, bearing in mind the possibility of a lower bank rate and that the next Budget may confirm hopes of reduced income tax.

Foreign rails, too, have been more active as a result of the better trend in markets. After its recent moderate reaction, Dorada Railway ordinary stock came into renewed demand and rose further to 65, before showing a small setback to 63. It is realised that there are no developments suggesting that an early take-over offer for the railway can be expected, but this is regarded as a possibility for the future, and on any fair and reasonable basis, the terms offered would have to be well over the current market price of the stock. United of Havana stocks have been less active, despite stockholders' approval of the reorganisation scheme. The prevailing view is that news of a definite take-over offer from Cuba is now unlikely until early in the New Year. At the time of writing, the 5 per cent 1906 debentures are changing hands around 18½, the 4 per cent Cuban debentures around 40, and the 4½ per cent Western debentures around 20½, while Havana Terminal debentures were 71. Activity in Cordoba Central "B" stock continued with the price higher again at 46½, though no early

pay-out on this stock is generally expected. There is, of course, a big speculative element in this case because, if the Argentine Government's claim against the company were only partly successful, the stock would be worth substantially more than its current market price.

Guayaquil & Quito 5 per cent first bonds have remained active up to 33. Costa Rica ordinary stock was 8½, the 6½ per cent first debentures 57½, and the 6½ per cent second debentures 41½. Elsewhere, Antofagasta ordinary stock eased to 10½, and the preference stock changed hands around 51. Manila "A" debentures were 76 and the preference shares 8s. 7½d. Mexican Central "A" debentures strengthened to 68, San Paulo 10s. ordinary units were 9s. 7½d., Nitrate Rails shares 17s. 6d., and Taltal 15s.

Road Transport shares have been more active with Southdown up to 82s. 6d., West Riding down to 30s. and Lancashire Transport 42s. B.E.T. deferred stock was 44s.

Engineering and kindred shares have continued to reflect the better tendency in stock markets with Vickers at 44s. 3d., Cammell Laird 5s. shares 11s. 7½d., and Babcock & Wilcox 70s. 6d. John Brown strengthened to 46s. 10½d. on the latest news of the extension of the company's engineering interests in accordance with the policy which has been followed since nationalisation of the group's steel assets. Renold & Coventry Chain moved up to 39s., and Tube Investments on further consideration of the financial results and chairman's annual statement, have risen sharply to 60s. 9d. T. W. Ward at 72s. 6d. also moved in favour of holders, Ruston & Hornsby were 38s. 9d., while Guest Keen rallied to 53s.

Shares of locomotive builders and engineers also received more attention because yields in most cases are attractive, and although higher dividends are not expected, it is assumed in the City that there are favourable prospects of dividends being maintained. Beyer, Peacock were favoured up to 31s. Birmingham Carriage were 32s., Hurst Nelson 43s., and North British Locomotive 13s. 7½d. Central Wagon, now "ex" the distribution, changed hands actively up to 60s. Vulcan Foundry were 23s., Gloucester Wagon 10s. shares 11s. 6d., Wagon Repairs 5s. shares 12s. 9d. and Charles Roberts 5s. shares 20s. 3d.

Traffic Table of Overseas and Foreign Railways

Railway	Miles open	Week, or month ended	Traffics for week		No. of week	Aggregate traffics to date				
			This year	Inc. or dec. compared with 1950/51		Total	Increase or decrease			
						1951/52				
South & Cen. America	Antofagasta ...	800	21.11.52	£ 208,210	+	£ 60,870	47	7,285,210	+	1,507,370
	Costa Rica ...	281	Oct., 1952	c1,296,769	+	c52,714	18	c5,360,796	+	c413,494
	Dorada ...	70	Oct., 1952	36,865	—	29	44	345,133	—	15,987
	Inter. Ctl. Amer. ...	794	Sep., 1952	\$909,367	—	\$20,744	39	\$9,797,041	—	\$169,444
	Paraguay Cent. ...	274	14.11.52	G650,066	+	G339,464	20	G12,001,406	+	G5,366,412
	Peru Corp. ...	1,050	Oct., 1952	\$9,097,000	+	\$716,000	18	\$37,947,020	+	\$5,049,000
	" (Bolivian Section)	66	Oct., 1952	Bs.18,674,000	+	Bs.350,000	18	Bs.66,080,000	+	Bs.6,361,000
	Salvador ...	100	Sep., 1952	c87,000	—	c28,000	13	c363,000	—	c18,000
	Taltal ...	122	Oct., 1952	\$3,106,000	+	\$1,467,000	18	\$11,644,000	+	\$3,701,000
Canada	Canadian National†	23,473	Oct., 1952	19,865,000	+	1,137,000	44	187,052,000	+	14,910,000
	Canadian Pacific†	17,037	Oct., 1952	13,352,000	—	115,000	44	126,435,000	+	7,968,000
Various	Barsi Light* ...	167	Oct., 1952	33,915	+	10,245	31	223,890	—	15,382
	Gold Coast ...	536	Sep., 1952	251,844	+	73,121	25	1,686,832	+	226,698
	Mid. of W. Australia	277	Sep., 1952	59,145	—	3,363	13	164,704	—	11,525
	South Africa ...	13,398	15.11.52	2,012,536	—	35,323	36	64,488,775	+	1,892,934
	Victoria ...	4,744	Aug., 1952	2,442,385	+	510,468	9	—	—	—

\* Receipts are calculated at 1s. 6d. to the rupee

† Calculated at \$3 to £1